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Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

Computation of Freeboard for Steamer, Sailing Ship, Tanker				Port of Survey <u>Bombay</u>	
having <u>Forecastle and Long Bridge</u>				Date of Survey <u>December 1946</u>	
<u>BHARATMATA</u> (Type of Superstructures.)				Name of Surveyor <u>John Rundle</u>	
Ship's Name <u>S. YGNA</u>	Nationality and Port of Registry <u>British Bombay</u>	Official Number <u>449717</u>	Gross Tonnage <u>3881</u>	Date of Build <u>1907-3</u>	
Moulded Dimensions: Length <u>360'</u> Breadth <u>54'7.5"</u> Depth <u>28'33"</u>				Particulars of Classification <u>for Classification previously +100A1</u>	
Moulded displacement at moulded draught = 85 per cent. of moulded depth					
Coefficient of fineness for use with Tables <u>normal 735</u>					

Depth for Freeboard (D)	Depth correction	Round of Beam correction
Moulded depth <u>28'33"</u>	(a) Where D is greater than Table depth (D - Table depth) R = <u>(28.37 - 24.00) 2.769 = + 12.10</u>	Moulded Breadth (B) <u>57'7.5"</u>
Stringer plate <u>50'04"</u>	(b) Where D is less than Table depth (if allowed) (Table depth - D) R = <u>4.37</u>	Standard Round of Beam = $\frac{B \times 12}{50} =$ <u>12.42</u>
Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$ <u>-</u>	If restricted by superstructures <u>✓</u>	Ship's Round of Beam = <u>13"</u>
Depth for Freeboard (D) = <u>28'37"</u>		Difference <u>58"</u>
		Restricted to <u>✓</u>
		Correction = $\frac{\text{Diff}^{\circ}}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{58}{4} \times \frac{3572}{4} = -105"$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)	
Poop enclosed						Standard Height of Superstructure <u>7'10"</u>
" overhang						" " R.Q.D. <u>✓</u>
R.Q.D. enclosed						Deduction for complete superstructure <u>39'33"</u>
" overhang						Percentage covered $\frac{S}{L} =$ <u>67.57</u>
Bridge enclosed... ..	<u>214'8"</u>	<u>204.08</u>	<u>7'5"</u>	<u>-</u>	<u>204.08</u>	" " $\frac{S_1}{L} =$ <u>64.28</u>
" overhang aft						" " $\frac{E}{L} =$ <u>53.28</u>
" overhang forward						Percentage from Table, Line A. <u>53.28</u>
F'cle enclosed <u>apart</u>	<u>25.60</u>	<u>25.60</u>	<u>7'5"</u>	<u>-</u>	<u>25.60</u>	(corrected for absence of forecastle (if required))
" overhang	<u>3.40</u>	<u>1.70</u>	<u>7'5"</u>	<u>-</u>	<u>1.70</u>	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 = <u>39.33 × 53.28 = - 20.96</u>
" " forward						
Total	<u>243.25</u>	<u>231.38</u>			<u>231.38</u>	

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product	
A.P.	<u>46.00</u>	1		<u>46.00</u>	<u>25"</u>	<u>25.0</u>	1		<u>25.00</u>	Mean actual sheer aft = Mean standard sheer aft = } <u>Deficient</u>
$\frac{1}{8}$ L from A.P.	<u>20.47</u>	4		<u>81.88</u>	<u>9.2"</u>	<u>9.5</u>	4		<u>38.00</u>	
$\frac{2}{8}$ L "	<u>5.06</u>	2		<u>10.12</u>	<u>NIL</u>	<u>-</u>	2		<u>-</u>	Mean actual sheer forward = Mean standard sheer forward =
Amidships	<u>-</u>	4		<u>-</u>	<u>NIL</u>	<u>-</u>	4		<u>-</u>	Length of enclosed superstructure forward of amidships =
$\frac{2}{8}$ L from F.P.	<u>10.12</u>	2		<u>20.24</u>	<u>3.2"</u>	<u>3.50</u>	2		<u>7.00</u>	" " aft of " =
$\frac{1}{8}$ L "	<u>40.94</u>	4		<u>163.76</u>	<u>27"</u>	<u>27.00</u>	4		<u>108.00</u>	Sheer aft
F.P.	<u>92.00</u>	1		<u>92.00</u>	<u>57.2"</u>	<u>57.50</u>	1		<u>57.50</u>	$\frac{10.12}{40.94} \times \frac{30.36}{122.82} = \frac{3.5}{27} \times \frac{10.5}{51.0} = \frac{119.0}{245.8} = -484$
Total				<u>414.00</u>					<u>235.50</u>	

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{178.5}{18} \left(.75 - \frac{33.79}{41.21} \right) = + 4.09$

If limited on account of midship superstructure. ✓

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

Deduction for Tropical Freeboard.	Deduction for Fresh Water.	TABULAR FREEBOARD corrected for Flush Deck (if required)	59.40
Addition for Winter and Winter North Atlantic Freeboard.	Displacement in salt water at summer load water line	Correction for coefficient $\frac{.735 + .68}{1.36} = \frac{1.415}{1.36}$	61.80
Depth to Freeboard Deck = <u>28'37"</u>	$\Delta =$ <u>at 23'8"</u>	Depth Correction <u>12'10"</u>	
Summer freeboard = <u>4'7.5"</u>	Tons per inch immersion at summer load water line	Deduction for superstructures <u>20'96"</u>	
Moulded draught (d) = <u>23'62"</u>	T = <u>38</u>	Sheer correction <u>4'09"</u>	
Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = <u>5'90" = 6"</u>	Deduction = $\frac{\Delta}{40 T}$ inches = <u>6.12"</u>	Round of Beam correction <u>1'05"</u>	
Addition for Winter North Atlantic Freeboard (if required) = <u>-</u>		Correction for Thickness of Deck amidships <u>-</u>	
		Other corrections, scantlings, etc. <u>-</u>	
		Summer Freeboard = <u>56'98"</u>	

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

Tropical Fresh Water Line above Centre of Disc	12'1/2"	Tropical Fresh Water Freeboard	4'9"
Fresh Water Line " "	6'1/2"	Fresh Water " "	3'8 1/2"
Tropical Line " "	6"	Tropical " "	4'2 1/2"
Winter Line below " "	6"	Winter " "	4'3"
Winter North Atlantic Line " "	6"	Winter North Atlantic " "	5'3"

PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS										
Description of Hatchway			...	...	...		
Dimensions of Hatchway			...	...	...		
COAMINGS	{	Height above Deck	...							
		Thickness	Sides	...						
			Ends	...						
		Stiffeners						
		Brackets, Stays	...	...				
HATCH BEAMS	{	Number	...	...	...		
		Spacing	...	...	...		
		Scantling and Sketch		...						
		Bearing Surface		...	...			
FORE AND AFTERS	{	Number	...	...	...		
		Spacing	...	...	...		
		Unsupported Lengths		...						
		Scantling* and Sketch		...						
		Bearing Surface	...	...				
HATCH COVERS	{	Material	...	...	...		
		Thickness	...	...	...		
		How fitted	...	...	...		
		Bearing Surface	...	...				
Spacing of Cleats			...	...	...	...
Number of Tarpaulins			...	...	...	...
<div>*Are wood fore and afters steel shod at all bearing surfaces ?</div> <div>Are battens and wedges efficient and in good condition ?</div> <div>Are tarpaulins in good condition and in accordance with rule requirements ?</div> <div>Are lashings provided in accordance with rule requirements ?</div>										

Particulars of fiddle, funnel and ventilator coamings :—

Particulars of Flush Bunker Scuttles :—

Forecastle.

$$\frac{Runs\ 6 \times 21.5}{38} = \frac{29.00 - 3.40\ \text{equivalent overhang}}{25.60\ \text{equivalent enclosed}}$$

Particulars of Companionways :—

Port

$$\frac{214.25}{360} = .5951$$

Particulars of Ventilators in exposed positions on freeboard and superstructure decks :—

$$\begin{array}{r} .7 \\ .5 \\ \hline .2 \end{array}$$

$$\frac{.0951}{.2} \times .10 = \frac{.0476}{.9524}$$

$$\begin{array}{r} .90 \\ 1.00 \\ \hline .10 \end{array}$$

Particulars of Air Pipes in exposed positions on freeboard, raised quarter, or superstructure decks :—

$$214.25 \times .9524 = 204.08$$

Particulars of Gangway Cargo and Coaling Ports :—

