

Rpt. C.11.

# Lloyd's Register of Shipping.

## SURVEYS FOR FREEBOARD.

Computation of Freeboard for Steamer, Sailing Ship, Tanker  
having Shelter deck.

Port of Survey Bombay.

Date of Survey August 30<sup>th</sup> 1935.

Name of Surveyor H. P. Southwell

Particulars of Classification \* 100 A1  
Shelter deck with funnels  
N. B. M. 11-32

Ship's Name <u>KALAVATI.</u>	Nationality and Port of Registry <u>British Bombay.</u>	Official Number <u>153811</u>	Gross Tonnage <u>1407</u> <u>1185</u>	Date of Build <u>1928-11</u>
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Moulded Dimensions: Length 230.0 Breadth 38.5 Depth 15.66 16.0

Moulded displacement at moulded draught = 85 per cent. of moulded depth 2,265 2340 tons

Coefficient of fineness for use with Tables .674 .68

<p>Depth for Freeboard (D)</p> <p>Moulded depth ... <u>16.00</u> <u>15.66</u></p> <p>Stringer plate ... <u>.5</u> <u>.04</u> <u>.041</u></p> <p>Sheathing on exposed deck <u>3/2</u></p> <p><math>T \left( \frac{L-S}{L} \right) =</math> <u>.07</u> <u>.061</u></p> <p>Depth for Freeboard (D) = <u>16.07</u> <u>16.04</u></p>	<p>Depth correction</p> <p>(a) Where D is greater than Table depth (D - Table depth) R = <u>+1.26</u> <u>+1.3</u> <math>(16.04 - 15.33) \times 1.769 =</math></p> <p>(b) Where D is less than Table depth (if allowed) (Table depth - D) R =</p> <p>If restricted by superstructures <input checked="" type="checkbox"/></p>	<p>Round of Beam correction</p> <p>Moulded Breadth (B) <u>38.5</u></p> <p>Standard Round of Beam = <math>\frac{B \times 12}{50} =</math> <u>9.24</u></p> <p>Ship's Round of Beam = <u>9.625</u></p> <p>Difference <u>+ .385</u></p> <p>Restricted to</p> <p>Correction = <math>\frac{\text{Diff}}{4} \times \left( 1 - \frac{S_1}{L} \right) =</math> <u>.385</u> <u>.0482</u> <u>41</u> <u>.Nil.</u></p>
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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 ...	<u>24.63</u>	<u>24.63</u>	<u>7.3</u>	<input checked="" type="checkbox"/>	<u>24.63</u>
" overhang ...	<u>29.37</u>	<u>14.68</u>	<u>+2.5</u>		<u>14.68</u>
R.Q.D. enclosed ...					
" overhang ...					
Bridge enclosed ...	<u>158.00</u>	<u>158.00</u>			<u>158.00</u>
" overhang aft ...	<u>17.0</u>	<u>16.5</u>	<u>7.3</u>	<input checked="" type="checkbox"/>	<u>10.50</u>
" overhang forward ...	<u>14.00</u>	<u>10.50</u>	<u>+2.5</u>		
Fore enclosed ...					
" overhang ...					
Trunk aft ...					
" forward ...		<u>.09</u>			
Tonnage opening aft ...	<u>4.0</u>	<u>11.125</u> ( <u>1/2 diff.</u> )		<input checked="" type="checkbox"/>	<u>11.09</u>
" forward ...		<u>.90</u>			
Total ...	<u>230.00</u>	<u>218.875</u>			<u>218.875</u>

Standard Height of Superstructure 6'-0"

" " R.Q.D. ☒

Deduction for complete superstructure 29

Percentage covered  $\frac{S}{L} =$  .982 100.00

" "  $\frac{S_1}{L} =$  .9518

" "  $\frac{E}{L} =$  .9518

Percentage from Table, Line A.  
(corrected for absence of forecastle (if required)) 94.07

Percentage from Table, Line B.  
(corrected for absence of forecastle (if required)) 93.97

Interpolation for bridge less than 2L (if required) .28

Deduction = 29 .9407 = 27.25

Standard mean = 16.6

### SHEER CORRECTION.

Excess height = 14.95 17.50

Actual height of superstructure = 7'-5 1/2"

Standard " = 6'-0"

Diff. = 1-5 1/2"

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ...	<u>33.0</u>	1		<u>33.0</u>	<u>33</u>	<u>47.93</u>	1		<u>47.93</u>
1/4 L from A.P. ...	<u>14.685</u>	4		<u>58.72</u>	<u>12.5</u>	<u>22.47</u>	4		<u>89.88</u>
1/2 L " ...	<u>3.63</u>	2		<u>7.26</u>	<u>3.5</u>	<u>5.3</u>	2		<u>11.12</u>
Amidships ...		4				<u>9.13</u>	4		<u>36.52</u>
3/4 L from F.P. ...	<u>7.26</u>	2		<u>14.52</u>	<u>7.0</u>	<u>8.9</u>	2		<u>17.8</u>
1/4 L " ...	<u>29.37</u>	4		<u>117.48</u>	<u>28.5</u>	<u>35.7</u>	4		<u>142.8</u>
F.P. ...	<u>66.00</u>	1		<u>66.0</u>	<u>65.5</u>	<u>80.43</u>	1		<u>80.43</u>
Total ...				<u>297.00</u>		<u>296.98</u>			<u>384.76</u>

Mean actual sheer aft = Even

Mean standard sheer aft = Even

Mean actual sheer forward = Even

Mean standard sheer forward = Even

Length of enclosed superstructure forward of amidships = 1.5

" " aft of " = 1.5

Correction =  $\frac{\text{Difference between sums of products}}{18} \left( .75 - \frac{S}{2L} \right) =$  -1.26 .10348 .25 = -1.44

If limited on account of midship superstructure. ☒

If limited to maximum allowance of 1 1/2 ins. per 100 ft.

Deduction for Tropical Freeboard.  
Addition for Winter and Winter North Atlantic Freeboard.

Depth to Freeboard Deck = 16.33 16.04

Summer freeboard = 0.37

Moulded draught (d) = 15.67

Deduction for Tropical freeboard and addition for Winter freeboard =  $\frac{d}{4}$  inches = 3.92 = 4

Addition for Winter North Atlantic Freeboard (if required) = 6

Deduction for Fresh Water.

Displacement in salt water at summer load water line

$\Delta =$

Tons per inch immersion at summer load water line

$T =$

Deduction =  $\frac{\Delta}{40T}$  inches = 4

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient ☒ Nil.

	+	-
Depth Correction ...	<u>1.26</u>	
Deduction for superstructures ...		<u>27.28</u>
Sheer correction ...		<u>1.44</u>
Round of Beam correction ...		
Correction for Thickness of Deck amidships ...	<u>3.50</u>	
Other corrections, scantlings, etc. ...		
	<u>4.76</u>	<u>28.72</u>
Summer Freeboard =		<u>4.54</u>

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

Tropical Fresh Water Line above Centre of Disc ...	<u>6 1/2</u>	Tropical Fresh Water Freeboard ...	<u>0' - 4 1/2</u>
Fresh Water Line " " ...	<u>4</u>	Fresh Water " " ...	<u>0' - 2</u>
Tropical Line " " ...	<u>2 1/2</u>	Tropical " " ...	<u>0' - 0 1/2</u>
Winter Line below " " ...	<u>4</u>	Winter " " ...	<u>0' - 2 (limited)</u>
Winter North Atlantic Line " " ...	<u>6</u>	Winter North Atlantic " " ...	<u>0' - 8 1/2</u>
			<u>0' - 10 1/2</u>

27 SEP 1935



# PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS									
Description of Hatchway	No. 1 and 3	No. 2	Tonnage Openings	Upper deck	Lower deck	Shelter deck	Except No. 3		
Dimensions of Hatchway	13'5" x 12'0"	17'3" x 12'0"	4'0" x 12'0"	12'0" x 12'0"	12'0" x 12'0"	12'0" x 12'0"	12'0" x 12'0"		
COAMINGS									
Height above Deck	30"	30"	30"	30"	30"	30"	30"		
Thickness	5"	5"	5"	5"	5"	5"	5"		
Stiffeners	7" B.A.	7" B.A.	7" B.A.	7" B.A.	7" B.A.	7" B.A.	7" B.A.		
Brackets, Stays	None	None	None	None	None	None	None		
HATCH BEAMS									
Number	2	3	3	3	3	3	3		
Spacing	4'-6"	4'-4"	4'-4"	4'-4"	4'-4"	4'-4"	4'-4"		
Scantling and Sketch	13 1/2" x 3"	Same as 1 and 3	None	Same as No. 1	Same as No. 1	Same as No. 1	Same as No. 1		
Bearing Surface	3" x 3" x 40 angle 10' 3" bottom	3"	3"	3"	3"	3"	3"		
FORE AND AFTERS									
Number									
Spacing									
Unsupported Lengths									
Scantling and Sketch									
Bearing Surface									
HATCH COVERS									
Material	Pine 3"	Same as 1 and 3	Pine 3"	Pine 3"	Pine 3"	Pine 3"	Pine 3"		
Thickness	3"	3"	3"	3"	3"	3"	3"		
How fitted	F.A.	F.A.	F.A.	F.A.	F.A.	F.A.	F.A.		
Bearing Surface	3"	3"	3"	3"	3"	3"	3"		
Spacing of Cleats	22-23"	22-23"	22-23"	22-23"	22-23"	22-23"	22-23"		
Number of Tarpaulins	3	3	3	3	3	3	3		

\*Are wood fore and afters steel shod at all bearing surfaces? ☒ Yes.  
 Are battens and wedges efficient and in good condition? ☒ Yes.  
 Are tarpaulins in good condition and in accordance with rule requirements? ☒ Yes.  
 Are lashings provided in accordance with rule requirements? ☒ Yes.

Particulars of fiddle, funnel and ventilator coamings:— Height of fiddle casing = 7'-3". Coamings on top = 5".  
 Angled steel covers fitted to all gratings. Funnel ventilators are continuous with riveted angle rings at casing top.  
 Engine room skylight - all steel - with 14" coaming.

Particulars of Flush Bunker Scuttles:— None.

Particulars of Companionways:— Forward: - 5'-11" x 45". 7'-3" high. Wood door - 36" wide - 18" x 35" coaming - 28" plating. 3" x 3" x 3" angle frame & stiffeners & 3" x 1" moulding bar stiffeners spaced 22"-24". Afters: - Same as above. Steel hooded Companionway between 1 and 2 hatches:—

Particulars of Ventilators in exposed positions on freeboard and superstructure decks:— 26"-30" high.  
 Wood plugs & canvas covers fitted.

Particulars of Air Pipes in exposed positions on freeboard, raised quarter, or superstructure decks:— The peak tank - 30" high on fore-castle head. A. peak tank - 30" high on shelter deck. Canvas covers fitted.

Particulars of Gangway Cargo and Coaling Ports:— None.

Kalavati

Particulars of Scuppers and Sanitary Discharge Pipes:—

Single storm valves fitted - all above upper deck.  
 5" S.D.N.R. Valve fitted on port & starboard sides of fore-castle head leading overboard and secured to the shelter deck.  
 The original scuppers led overboard from the shelter deck. These have been closed with riveted plates.

Particulars of Side Scuttles:—

Blind deadlights fitted.  
 None below upper deck.

Particulars of Guard Rails:—

On fore-castle head only.  
 38" high & of substantial construction.

Particulars of Gangways, Lifelines, etc.:—

No special fittings  
 can be readily rigged if needed.

Particulars of Freeing Arrangements.						
	Length of Bulwark	Height of Bulwark	Size of Freeing Ports	Number each side	Area each side	Rule area each side
After Well	170' open.	45"	36" x 22"	6	33 sq. ft.	16.25 sq. ft.
Forward Well	24' including side houses		(14" x 10" freeing port with shutter in the main bulkhead)			
State position of each freeing port (F, and A. position and height above deck edge) { After Well:— Equidistant - 5 1/2". State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such:— Double shutters & bars. Additional area where sheer is less than standard. <input checked="" type="checkbox"/>						

Particulars of Superstructures, Trunks, Casings, Deckhouses.								
	Coaming	Plating	Stiffeners	Spacing	End Attachments of Stiffeners	Size of Openings	Height of Sills	Height of Casings
Poop Bulkhead	28	28	3 1/2 x 3 x 32	30"	None.	None.	✓	7'-3"
Raised Quarter Deck Bulkhead	✓							
Bridge, After Bulkhead	30	28	4 x 3 x 28	30"	None	36"	18"	7'-3"
Bridge, Forward Bulkhead	28	28	3 1/2 x 3 x 32	30"	None	None	✓	7'-3"
Fore-castle Bulkhead	32	28	4 x 3 x 30	24"	None.	None.	✓	7'-3"
Ship side Bulkhead	32	32	3 1/2 x 3 1/2 x 3"	28"	Beam knees.	28"	13"	7'-3"
Trunk, Forward Bulkhead	✓							
Exposed Machinery Casings on Freeboard or Raised Quarter Decks	✓							
Exposed Machinery Casings on Superstructure Decks	26	26.	4 x 3 x 20	26"	None.	24"	18"	7'-3"
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	✓							
Deckhouses on Flush Deck Ships	46	3	3 1/2 x 1 1/2"	26"-28"	12" x 12" x 35"	33"	19"	7'-3"

Particulars of Closing Appliances (state if capable of being manipulated from both sides).	
Poop Bulkhead	✓ No opening. Fore-castle opening has efficient temporary wood covers - 3" thick.
Raised Quarter Deck Bulkhead	✓
Bridge, After Bulkhead	✓ Storm boards in marked channels full height
Bridge, Forward Bulkhead	✓
Fore-castle Bulkhead	✓
Exposed Machinery Casings on Freeboard or Raised Quarter Decks	✓
Exposed Machinery Casings on Superstructure Decks	✓
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	✓
Deckhouses on Flush Deck Ships	✓

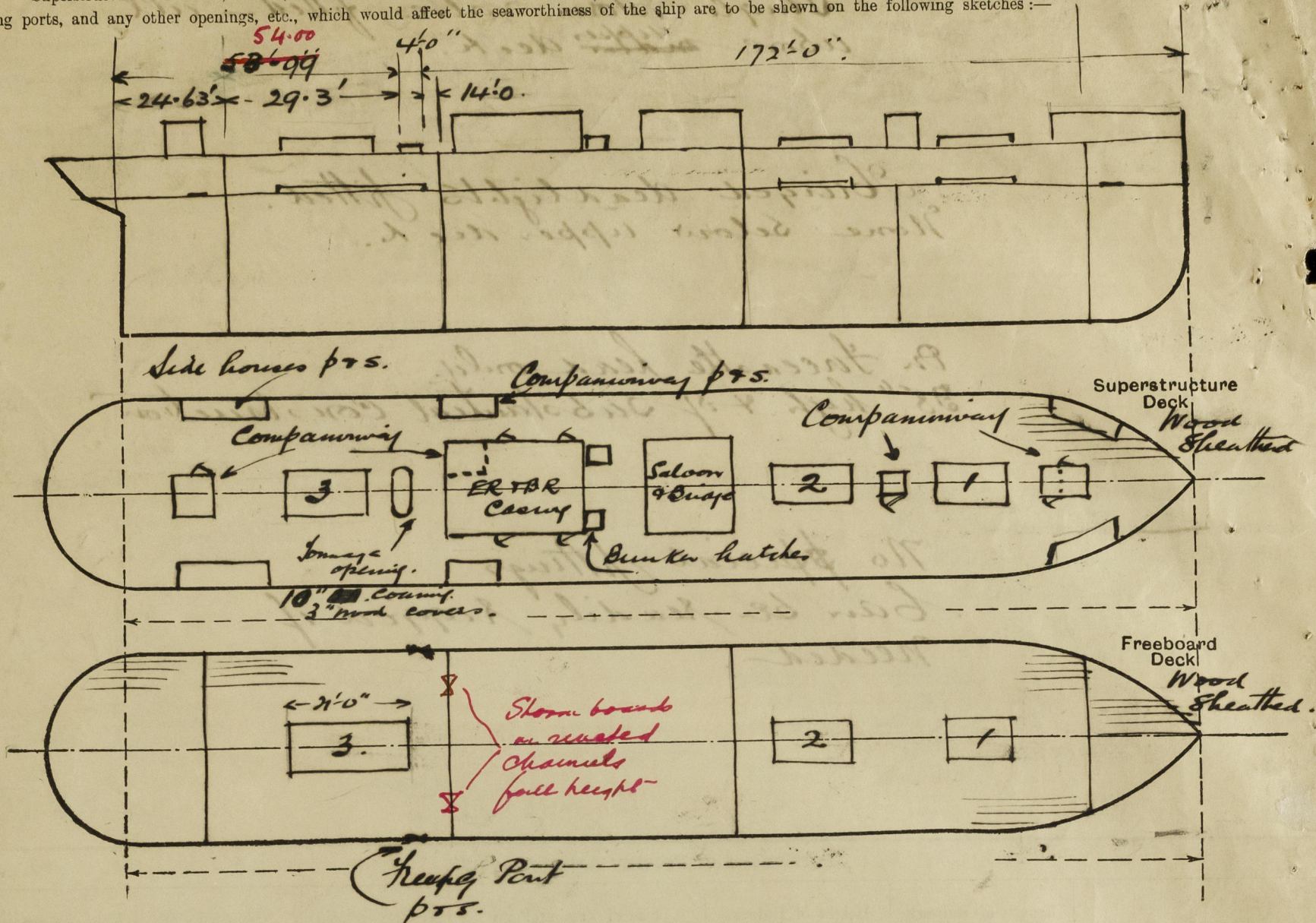
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Superstructure bulkheads, trunks, deckhouses, casings, cargo and coaling hatchways, extent and thickness of sheathing on the freeboard deck, gangway, cargo and coaling ports, and any other openings, etc., which would affect the seaworthiness of the ship are to be shown on the following sketches:—



State any special features in the construction of the ship:—

Vessel surveyed in dry docks.

Builder's name and yard number.

Names of sister ships

Owners

Bombay Steam Nav. Co. Ltd.

Fee *R 400/-*

Received by me



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