

Rpt. C.11.

# Lloyd's Register of Shipping.

## SURVEYS FOR FREEBOARD.

No. 101015.

Computation of Freeboard for Steamer, Sailing Ship, Tanker  
having Raised quarter deck, Bridge & Forecastle Deck  
(Type of Superstructures.)

Port of Survey Liverpool  
Date of Survey Sept 1932  
Name of Surveyor R.R. Ruthven  
Particulars of Classification 100 A.1.  
S.S. 2nd No. 3-12, 24  
S.S. 2nd No. 128

Ship's Name "THE LADY BELLE"  
Nationality and Port of Registry British Liverpool  
Official Number 109733  
Gross Tonnage 331  
Date of Build 1900-5M.

Moulded Dimensions: Length LWL 140.0 Breadth 24.0 Depth 10.82  
Moulded displacement at moulded draught = 85 per cent. of moulded depth  
Coefficient of fineness for use with Tables 666 68 lowest in table

Depth for Freeboard (D) 10.44  
Depth correction (a) Where D is greater than Table depth (D-Table depth) R = (10.44-9.33) 1.044 = + 1.52  
(b) Where D is less than Table depth (if allowed) (Table depth-D) R =  
If restricted by superstructures  
Round of Beam correction  
Moulded Breadth (B) 24.0  
Standard Round of Beam =  $\frac{B \times 12}{50} = \frac{24 \times 12}{50} = 5.76$   
Ship's Round of Beam = 6.00  
Difference 24  
Restricted to  
Correction =  $\frac{\text{Diff}}{4} \times \left(1 - \frac{S_1}{L}\right) = \frac{24}{4} \times \left(1 - \frac{24}{140}\right) = 6 \times .227 = -1.36$

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 ...	<u>75.75</u>	<u>75.75</u>	<u>3.9</u>		<u>75.75</u>
" overhang ...					
Bridge enclosed ...	<u>10.50</u>	<u>10.50</u>	<u>7.0</u>		<u>10.50</u>
" overhang aft ...					
" overhang forward ...					
Forecastle enclosed ...	<u>21.95</u>	<u>21.95</u>	<u>7.0</u>		<u>21.95</u>
" overhang ...					
Trunk aft ...					
" forward ...					
Tonnage opening aft ...					
" forward ...					
Total ...	<u>108.20</u>	<u>108.20</u>			<u>108.20</u>

Standard Height of Superstructure 6.0  
" " R.Q.D. 3.264  
Deduction for complete superstructure 20  
Percentage covered  $\frac{S}{L} = \frac{75.75}{108.20} = 70.0$   
" "  $\frac{S_1}{L} = \frac{75.75}{108.20} = 70.0$   
" "  $\frac{E}{L} = \frac{75.75}{108.20} = 70.0$   
Percentage from Table, Line A. 41.98  
(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 = 20 x 41.98 = 8.396

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ...	<u>24.00</u>	1		<u>24.00</u>	<u>16.0</u>	<u>18.00</u>	1		<u>23.80</u>
$\frac{1}{2}$ L from A.P. ...	<u>10.68</u>	4		<u>42.72</u>	<u>4.0</u>	<u>7.11</u>	4		<u>28.44</u>
$\frac{3}{8}$ L " ...	<u>2.64</u>	2		<u>5.28</u>	<u>1.0</u>	<u>1.77</u>	2		<u>3.54</u>
Amidships ...	-	4		-	-	-	4		-
$\frac{3}{8}$ L from F.P. ...	<u>5.28</u>	2		<u>10.56</u>	<u>6</u>	<u>4.93</u>	2		<u>9.86</u>
$\frac{1}{2}$ L " ...	<u>21.36</u>	4		<u>85.44</u>	<u>19.0</u>	<u>19.75</u>	4		<u>79.00</u>
F.P. ...	<u>18.00</u>	1		<u>18.00</u>	<u>40.5</u>	<u>40.50</u>	1		<u>40.50</u>
Total ...				<u>216.00</u>					<u>200.70</u>

Correction =  $\frac{\text{Difference between sums of products}}{18} \left( \frac{S}{2L} \right) = \frac{15.30}{18} \left( \frac{75}{2 \times 140} \right) = + .31$   
If limited on account of midship superstructure.  
Mean actual sheer aft = deficient  
Mean standard sheer aft = deficient  
Mean actual sheer forward = deficient  
Mean standard sheer forward = deficient  
Length of enclosed superstructure forward of amidships = 116  
" " aft of " = 50

Deduction for Tropical Freeboard.  
Addition for Winter and Winter North Atlantic Freeboard.  
Depth to Freeboard Deck = 14.49  
Summer freeboard = 3.92  
Moulded draught (d) = 10.54  
Deduction for Tropical freeboard and addition for Winter freeboard =  $\frac{d}{4}$  inches =  $\frac{10.54}{4} = 2.64 = 2\frac{3}{4}$   
Addition for Winter North Atlantic Freeboard (if required) =  $2\frac{3}{4} + 2 = 4\frac{3}{4}$

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 =  $\frac{\Delta}{40 T}$  inches  
 $\frac{9}{4} = 2\frac{1}{4}$

TABULAR FREEBOARD corrected for Flush Deck (if required)  
Correction for coefficient  
Depth Correction ... 1.52  
Deduction for superstructures ... 14.40  
Sheer correction ... 3.1  
Round of Beam correction ... 0.01  
Correction for Thickness of Deck amidships ... 45.00  
Other corrections, scantlings, etc. ...  
Summer Freeboard = 46.62

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

Tropical Fresh Water Line above Centre of Disc ...	<u>2 3/4</u>	Tropical Fresh Water Freeboard ...	<u>3 3/4</u>
Fresh Water Line " " ...	<u>2 3/4</u>	Fresh Water " " ...	<u>3 3/4</u>
Tropical Line " " ...	<u>0</u>	Tropical " " ...	<u>3 11/16</u>
Winter Line below " " ...	<u>2 3/4</u>	Winter " " ...	<u>4 1 3/4</u>
Winter North Atlantic Line " " ...	<u>4 3/4</u>	Winter North Atlantic " " ...	<u>4 3/4</u>



HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS									
Description of Hatchway ... ..			1	2					
Dimensions of Hatchway ... ..			21'0"x10'0"	17'6"x10'0"					
COAMINGS	{	Height above Deck ...	3'-7"	3'-1"					
		Thickness { Sides ...	3/8"	as					
			Ends ...	3/8"	as				
		Stiffeners ...	1" x 3" 8' 3 1/2' sides	2" 1"					
		Brackets, Stays ...	2" x 3" 8' 3 1/2' ends 2" x 10" 8' 3 1/2' ends	2" 1"					
HATCH BEAMS	{	Number ... ..	2	1					
		Spacing ... ..	7'-0"	8'-9"					
		Scantling and Sketch ...	PL	as					
			18" x 36"	as					
			3 x 3 x 38"	2" 1"					
Bearing Surface ...	3								
FORE AND AFTERS	{	Number ... ..	1 Ch	1 Ch					
		Spacing ... ..	5'-0"	8'-3"					
		Unsupported Lengths	6'-6"						
		Scantling* and Sketch ...	1" x 3 x 2 1/2"	1" x 4 x 2 1/2"					
			6 1/2"	6 1/2"					
Bearing Surface ...	3	3							
HATCH COVERS	{	Material ... ..	WW	as					
		Thickness ... ..	2 3/4"	2" 1"					
		How fitted ... ..	thru riv						
		Bearing Surface ...	2 1/2" Ch 3 1/2' sides	3 1/2" Ch 3 1/2' sides					
Spacing of Cleats ... ..			20' cleats	28' cleats					
Number of Tarpaulins ... ..			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 fiddley, funnel and ventilator coamings :—

Engine Room Skylight, wood, efficient.  
Funnel & Firstley Ventilator coverings are efficient.  
Firstley gratings *hunged steel covers.*  
Wood hatch on Craning Tapp. 3-6 x 14-0. braming 8 x 25. w.w. covers 2 1/2 fws.  
Bearing 1 3/4 aft end, 1 1/2 fore end. cleats 3 1/2 apart. 2 Tarpsaulins

Particulars of Flush Bunker Scuttles :—

June ✓

Particulars of Companionways :—


June.

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

1	Vent in	Ele Beck	7"	ch	warning	24 x 25	To chw.	✓
1	"	Y.B.H.	"	P	"	"	24 x 25 To Hld.	✓
1	"	R.Q.BK.	"	S	"	"	24 x 25 " "	✓

wood plugs + Canvas covers. ✓

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

35 chain on Life deck in bow. 7" high  to fore peak Transl ✓  
wood plug  
Smoothing Hole. ✓

Particulars of Gangway Cargo and Coaling Ports:—

Zone.

THE LADY BELLE

Particulars of Scuppers and Sanitary Discharge Pipes :—

Sanitary discharge pipe fitted with storm valve about 2-0" below H.B. box forward port side

Particulars of Side Scuttles:—

Suck Semesters in L&L Turn DKS news quarters fitted with deadlights. ✓  
" " " Bridge " " Officers quarters. No deadlights. ✓


Particulars of Guard Rails :—

on pile deck 36" high. 2 wls. Stanchions about 48" apart ✓  
Steel buttress in bridge dk. 32" high

Particulars of Gangways, Lifelines, etc. :—

~~Zone.~~

Quintable horseshoe made for rigging lifeline.

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 <i>RROK</i> ...	<i>72'-3"</i>	<i>42"</i>	<i>27' x 17"</i> 	<i>2</i> } <i>2</i>	<i>14 1/2</i> <del><i>65</i></del> <i>4</i>	<i>14 1/2</i> <i>4</i>
Forward Well* ...	<i>29-9</i>	<i>47</i>	<i>28 x 18</i> -	<i>3</i>	<i>10 1/2</i> ✓	<i>9 1/2</i> ✓
<p>State position of each freeing port ... (F. and A. position and height above deck edge) <i>RROK</i> After Well:—  <i>FORWARD WELL</i> Forward Well:—            State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such:—  <i>Balanced steel shutters.</i> ✓</p>						
Additional area where sheer is less than standard.						

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 ... ..								
Raised Quarter Deck Bulkhead ...	.32 ✓	.26 ✓	3 x 2½ x .28 ✓	30 ✓	✓	✓	✓	3-9 ✓
Bridge, After Bulkhead ... ..								
Bridge, Forward Bulkhead ... ..	.32 ✓	.26 ✓	3 x 2½ x .28 ✓	30 ✓	✓	3 scuttles ✓	60 in. or ✓	7-0 ✓
Forecastle Bulkhead ... ..		Very weak ✓	3 x 2½ x .28 ✓	30 ✓	✓	65 x 23 ✓	12 ✓	7-0 ✓
Trunk, Aft ... ..								
Trunk, Forward ... ..								
Exposed Machinery Casings on Free-board or Raised Quarter Decks ...	.32 ✓	.26 ✓	2½ x 2½ x .28 ✓	38 ✓	Knee at top ✓	55 x 23 ✓	19 ✓	6-6 ✓
Exposed Machinery Casings on Super-structure Decks ... ..								
Machinery Casings within Superstructures not fitted with Class I Closing Appliances ... ..								
Deckhouses on Flush Deck Ships ...								

Particulars of Closing Appliances (state if capable of being manipulated from both sides).

Coop Bulkhead	...	...	✓	
Raised Quarter Deck Bulkhead	...	✓	} no openings	
Bridge, After Bulkhead	...	✓		
Bridge, Forward Bulkhead	...	...		no openings
Forecastle Bulkhead	...	...		<del>3 scuttles</del> no deadlights
Exposed Machinery Casings on Freeboard or Raised Quarter Decks	...	...		Wood doors operated from both sides
Exposed Machinery Casings on Superstructure Decks	...	...		Hinged steel doors. 2 turnbuckles operated from both sides
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	...	...	✓	
Deckhouses on Flush Deck Ships	...	...	✓	



Hand-drawn plan view of a boat hull showing two decks: Superstructure Deck and Freeboard Deck.

**Superstructure Deck:**

- ENGRS
- E & R. SPACE
- COAL
- HOLD
- WHEEL HOUSE
- SALOON
- CREW HATCH
- STORE
- PEAK TANK

**Freeboard Deck:**

- ENGRS
- GALLY
- STEEL DOOR
- COAL
- W.C.
- WOOD DK
- PANELLED WOOD HOUSE
- WHEEL HOUSE
- STEEL
- SALOON
- CREW
- WOOD DK
- PLUG HATCH

**Dimensions:**

- 75.75
- 13.5
- 10.5
- 29.75
- 24.0
- 140.0

**Notes:**

- GALLEY DOORS STEEL 55x23. SILL 19 BOLT ON LOWER HALF IN FASTENER TO ANGLE
- STEEL DOOR 53x23 SILL 12" SLIP BOLT FASTENER.
- Frame to be in Fore Peak Tank fitted with bolted & jointed steel plate cover.

**Calculation:**

$$76.0 = 24.0 - 12.0 = 24.0$$

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

Survey when vessel afloat  
for Freeboard Assignment  
only.

Builder's name and yard number *J. Fullerton & Co. Paisley N° 153.*

Names of sister ships

Owners Maloney S. S. Co. Ltd.

Fee £ 5 : 2 : 0

Received by me