

B.T. COPY

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Index. No. 33669  
(For London Office only.)

# Lloyd's Register of Shipping.

## SURVEYS FOR FREEBOARD.

No. 100491.

Computation of Freeboard for Steamer, Sailing Ship, Tanker  
having *Shelter Deck with Tonnage opening* *Raised Tole*

(Type of Superstructures.)

Ship's Name <i>"City of Barcelona"</i>	Nationality and Port of Registry <i>British Liverpool</i>	Official Number <i>161151</i>	Gross Tonnage <i>5698</i> <i>5787</i>	Date of Build <i>1930</i> <i>5th Nov</i>
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Moulded Dimensions: Length *425'* Breadth *58'-0"* Depth *29.75'* (to upper deck) *28.29'*  
Moulded displacement at moulded draught = 85 per cent. of moulded depth *13,220* tons  
Coefficient of fineness for use with Tables *742*

Particulars of Classification *+ 100 A.1.*  
*Noted for carrying oil 5.3d. F.R. above 150°F*  
*for deck tank and forward peak tank*

<p>Depth for Freeboard (D)</p> <p>Moulded depth ... <i>29.75'</i></p> <p>Stringer plate ... <i>0.41'</i></p> <p>Sheathing on exposed deck <math>T \left( \frac{L-S}{L} \right) =</math></p> <p>Depth for Freeboard (D) = <i>29.79'</i></p>	<p>Depth correction</p> <p>(a) Where D is greater than Table depth (D - Table depth) R = <i>(29.79 - 28.33) 3 + 4.38</i></p> <p>(b) Where D is less than Table depth (if allowed) (Table depth - D) R =</p> <p>If restricted by superstructures</p>	<p>Round of Beam correction</p> <p>Moulded Breadth (B) <i>58'</i></p> <p>Standard Round of Beam = <math>\frac{B \times 12}{50} =</math> <i>13.92</i></p> <p>Ship's Round of Beam = <i>13.35</i></p> <p>Difference <i>0.57</i></p> <p>Restricted to</p> <p>Correction = <math>\frac{\text{Diff}}{4} \times \left( 1 - \frac{S_1}{L} \right) =</math> <i>0.17 (0.0071) Nil</i></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 ...	<i>33'</i>	<i>33.0</i>	<i>8'-0"</i>		<i>33.0</i>
" overhang ...	<i>✓</i>				
R.Q.D. enclosed ...	<i>✓</i>				
" overhang ...	<i>✓</i>				
Bridge enclosed ...	<i>✓</i>				
" overhang aft ...	<i>✓</i>				
" overhang forward ...	<i>✓</i>				
Fore enclosed ...	<i>386'</i>	<i>386.0</i>	<i>8'-0"</i>		<i>386.0</i>
" overhang ...	<i>✓</i>				
Trunk aft ...	<i>✓</i>				
" forward ...	<i>6'</i>	<i>3.0</i>	<i>8'-0"</i>		<i>3.0</i>
Tonnage opening aft ...	<i>✓</i>				
" forward ...	<i>✓</i>				
Total ...	<i>425.0</i>	<i>422.0</i>			<i>422.0</i>

Standard Height of Superstructure *7.50'*

" " R.Q.D.

Deduction for complete superstructure *42.00*

Percentage covered  $\frac{S}{L} = 100$

" "  $\frac{S_1}{L} = 99.29$

" "  $\frac{E}{L} = 99.29$

Percentage from Table, Line A. *99.13*  
(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 = *41.63*

## SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ...	52.50	1	52.50	64 1/2	+6 66.0	72.00	1	72.00	
1/4 L from A.P. ...	23.36	4	93.44	26	28.05	32.04	4	128.16	
1/2 L " ...	5.77	2	11.54	6 1/2	7.01	7.92	2	15.84	
Amidships ...	✓	4	✓	0	✓	✓	4	✓	
3/4 L from F.P. ...	11.55	2	23.10	12	13.63	14.52	2	29.04	
1/4 L " ...	46.73	4	186.92	53 1/2	54.91	58.74	4	234.96	
F.P. ...	105.00	1	105.00	126	126.0	132.00	1	132.00	
Total ...			472.50		+6"			612.00	

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

$\frac{139.50 \times 25}{18} = -1.94$

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 = *29.79'*  
Summer freeboard = *3.65*  
Moulded draught (d) = *26.14*

Deduction for Tropical freeboard and addition for Winter freeboard =  $\frac{d}{4}$  inches = *6.53* *6 1/2*

Addition for Winter North Atlantic Freeboard (if required) =

Deduction for Fresh Water.

Displacement in salt water at summer load water line

$\Delta = 13,220$

Tons per inch immersion at summer load water line

$T = 49.1$

Deduction =  $\frac{\Delta}{40T}$  inches = *7.03*

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient  $\frac{742 + 68}{1.31} \times \frac{1.422}{1.34} =$

	+	-
Depth Correction ...	<i>4.38</i>	
Deduction for superstructures ...	<i>41.63</i>	
Sheer correction ...	<i>1.94</i>	
Round of Beam correction ...		
Correction for Thickness of Deck amidships ...		
Other corrections, scantlings, etc. ...		
	<i>4.38</i>	<i>43.57</i>

Summer Freeboard = *43.78*

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

Tropical Fresh Water Line above Centre of Disc ...	<i>13 1/2</i>
Fresh Water Line " " ...	<i>7</i>
Tropical Line " " ...	<i>6 1/2</i>
Winter Line below " " ...	<i>6 1/2</i>
Winter North Atlantic " " ...	<i>✓</i>

Tropical Fresh Water Freeboard ...	<i>3 - 7 3/4</i>
Fresh Water " " ...	<i>2 - 6 1/4</i>
Tropical " " ...	<i>3 - 0 3/4</i>
Winter " " ...	<i>3 - 1 1/4</i>
Winter North Atlantic " " ...	<i>4 - 2 1/4</i>



Particulars of Scuppers and Sanitary Discharge Pipes:— all Scuppers (except on exposed weather decks & Innage well) & all Sanitary discharges are fitted with Storm Valves at Ship's side. ✓

The Scuppers from Foreboard deck, Stern or Keel (with exception of Scuppers on Innage well) are cut through Manger angle & Box form Storm valve fitted on same.

Particulars of Side Scuttles:—

all Side Scuttles are of Substantial Construction & fitted with efficient Steel Hinged Ventilators.

Particulars of Guard Rails:—	FOUR DECK:—	39" High	3 Rails	Stanchions Spaced	4'0" & 5'3" apart.
	SHELTER " :—	40" "	" "	" "	4'0" & 5'0" ✓

Particulars of ~~Gangways~~, Lifelines, etc.:—

Particulars of fiddley, funnel and ventilator coamings:—  
Fiddley, funnel & vent coamings are in efficient condition. ✓  
Efficient steel hinged covers over fiddley flatings. ✓  
Engine Room skylight of steel strongly constructed. ✓

Particulars of Freeing Arrangements.						
	Length of Bulwark	Height of Bulwark (From deck)	Size of Freeing Ports	Number each side	Area each side	Rule area each side
Image After Well ... ..	6'0	8'	2'9 x 1'3"	1	3.4	✓
Forward Well ... ..						

State position of each freeing port ... .. } After Well:— *midway in Image opening*  
(F. and A. position and height above deck edge) } Forward Well:— *Height above deck edge 4"*

State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such:— *Hinged Steel Shutters.*

Additional area where sheer is less than standard.

Particulars of Flush Bunker Scuttles:—		None.		<u>PARTICULARS OF COMPANIONWAYS:—</u>			
One in Poop House (Starboard) to crew below.	opening	5'1" x 29"	Sid 13"	above wood deck	Steel door	operated from both sides	
" " " " (Port) " " crew below	"	5'3" x 26"	" 13"	" "	" "	" "	
" " " " " "	"	5'2" x 26"	" 15"	" Steel	" "	" "	
" " aft end Engineer's House	"	5'1" x 36"	" 15 1/2"	" "	" "	" "	
" " Entrance to Engine Room	"	"	"	" "	" "	" "	
" " Mast House (Port)	"	4'0" x 24"	" 30"	" "	Steel 10 T door	" "	
" " Steel Trunk under mast House leading to Tank Deck	"	4-8 x 8.3	" 11 1/2"	" "	" door	" "	

[illegible]

SHELTER OF (CONTD)			
2C 16 1/2 dia	32" x 1/8" msg	6	Shells' Tween Decks
2C 10"	30" x 1/8"	"	" "
4C 6"	32" x 1/8"	6	Bunkers
2C 8"	30" x 1/8"	"	" "
3C 15"	30" x 1/8"	6	Engine Room
2C 10"	30" x 1/8"	6	Bunkers (Tween Deck)
1C 13"	31" x 1/8"	"	" "

Particulars of Air Pipes in exposed positions on freeboard, raised quarter, or superstructure decks.										
<b>FOCLE DECK:-</b>			<b>SHELTER DECK(Contd)</b>				<b>SHELTER DECK(Contd)</b>			
1 @ 2" dia	23" h	lb 1/2	No 1	50	50	1 @ 4" dia	25" h	lb 1/2	No 3	50
2 @ 2" dia	23" "	"	No 1	"	"	2 @ 4" dia	25" h	lb 1/2	No 7	50
1 @ 3" "	29" "	"	No 2	"	"	2 @ 4" "	25" "	"	"	8
1 @ 3" "	26" "	"	No 2	"	"	2 @ 2 1/2" "	25" "	"	"	5
1 @ 3 1/2" "	22" "	"	No 3	"	"	1 @ 2 1/2" "	25" "	"	aft Peak	

Particulars of Gangway Cases and Coaling Ports:—

1 Coaling Dorr (Drs) in Bunker Space  
5'6" x 3'0" Sill 6" Strong Steel  
Hinged doors apparently secured  
by Strong Locks.

BUNKER HATCHES ON SHELTER DECK:—

2 @ 12'4" x 5'6" Craming 30"x1 1/2"  
7" B.A. Skiffers. 1/2" wood covers  
3" bearing cleats 22" apart.  
2 Japauline.

2 @ 4'5" x 2'11" Cms 30" x 1/2" 1/2" wood covers  
3" bearing cleats 23" 2 Japauline  
Hinged doors apparently secured  
Opening in Trunk 6 x 3 Sill 12"  
3/4" steel cover

SMALL HATCHES + BUNKER HATCHES:—

BUNKER HATCHES ON FBD DECK:—

2 @ 14'9" x 4'0" 9" B.A Cms  
2 1/2" wood covers cleats 24"  
3" bearing 2 Japauline

TRIMMING HATCHES:—

2 @ 3'2" x 2'6" 3" angle craming  
3" wood cover 3" bearing  
2 Japauline

BUNKER HATCH ON CASING TOP:—

15'4" x 6'5" 9" B.A craming  
2 1/2" wood covers 3" bearing  
cleats 24" Sides 24" ends  
2 Japauline

ON SHELTER DECK AFT TRUNKED TO STORE:—

4'0" x 4'0" 12" channel craming  
Strong Steel Beads cover. opening  
cover with hinged cover apparently  
secured (W.T.) by turn buckle

HATCH ON FOGLE DECK:—

4'0" x 3'0" 9" "C" craming Strong Steel beads  
cover.

HATCH ON SHELTER DECK TO FORWARD STORE:—

2'9" x 3'0" 3" angle Cms 2 1/2" wood cover  
3" bearing 2 Japauline

HATCH ON SHELTER DECK TO FORWARD STORE:—

4'0" x 3'0" 9" angle craming  
3" wood cover 3" bearing  
2 Japauline

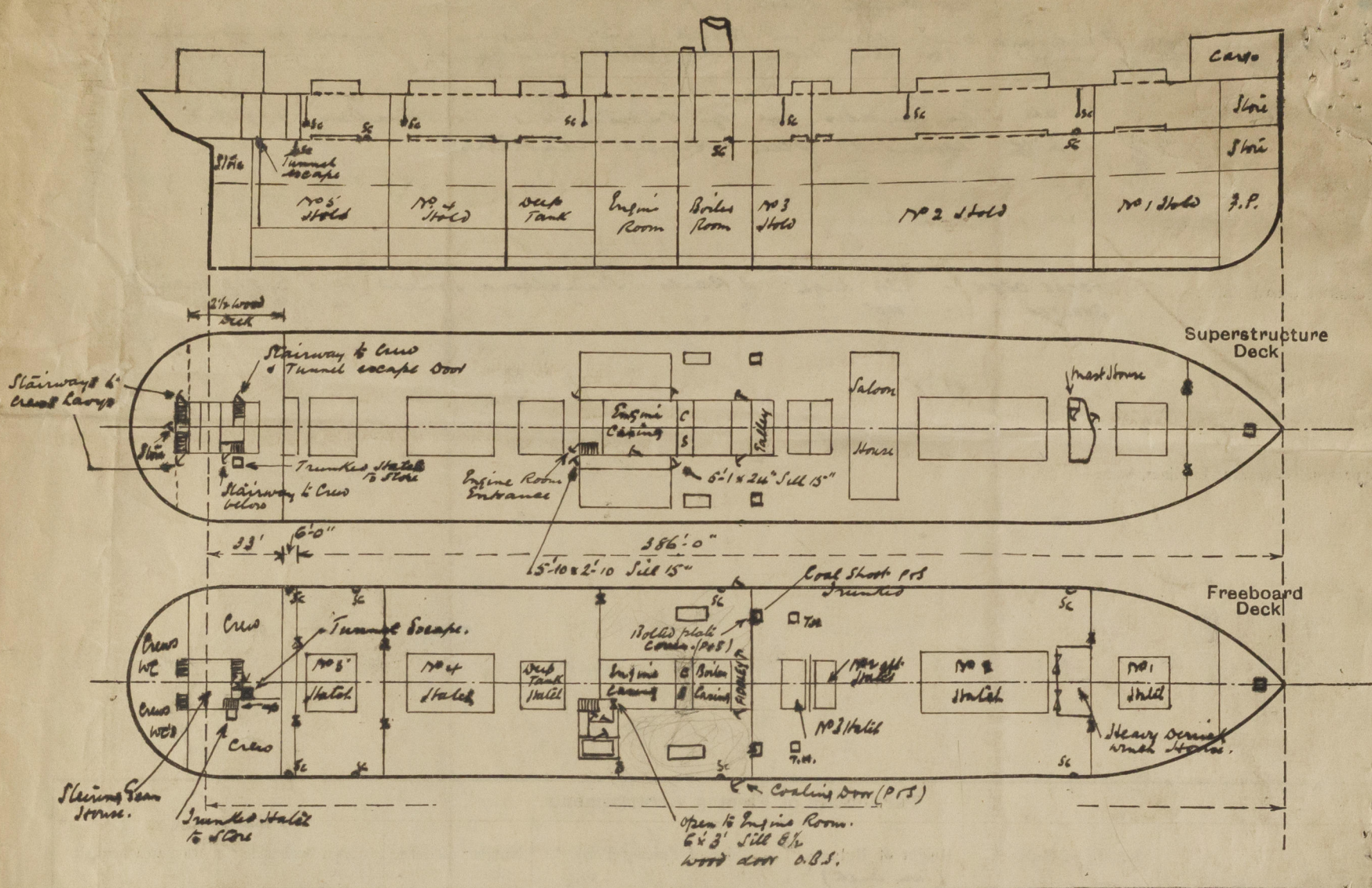
Particulars of Superstructures, Trunks, Casings, Deckhouses.								
	Coaming	Plating	Stiffeners	Spacing	End Attachments of Stiffeners	Size of Openings	Height of Sills	Height of Casings
Poop Bulkhead <i>TONNAGE WELL AFT BULKHEAD</i> ...	✓	1/4 ✓	3 1/2 flanges ✓	32" 4 37" ✓	none	none	✓	8'-0"
Raised Quarter Deck Bulkhead ...	✓							
Bridge, After Bulkhead ...	✓							
Bridge, Forward Bulkhead ...	✓							
Forecastle Bulkhead <i>TONNAGE WELL FOR. BULKHEAD</i> ...	✓	1/4 ✓	3 1/2 flanges ✓	32" 4 37"	none	5'-7 x 4' wide	17 -	8'-0"
Trunk, Aft <i>FULL BULKHEAD INSULATED OR</i> ...	✓	5/16 ✓	3 1/2 flanges ✓	31 4 35"	none	5'-0 x 8'-6	18 ✓	7'-6"
Trunk, Forward <i>INSULATED BULKHEAD</i> ...	✓							
Exposed Machinery Casings on Deckhouse or Raised Quarter Decks ...	✓	5/16	3 1/2 x 8 x .35" 3" flanges ✓	28"	Brackets at Top	5' x 2'-4	12 -	7'-9
Exposed Machinery Casings on Superstructure Decks ...	✓	5/16 ✓	3 1/2 x 8 x .35" ✓	30"	Brackets at Top	4'-11 x 2'-0	15 -	7'-9
Machinery Casings within Superstructures not fitted with Class I Closing Appliances ...	✓	1/4 ✓	3 1/2 x 8 x .35" 4 3" flanges alternately	28	Brackets at Top or from 1/2 R.R. Stanchion	5' x 2'-0 6' x 2'-0	15" 8 1/2 ✓	8'-0
Deckhouses on Flush Deck Ships ...	✓							

Particulars of Closing Appliances (state if capable of being manipulated from both sides).	
Poop Bulkhead ... ..	<i>have openings</i>
Raised Quarter Deck Bulkhead ...	/
Bridge, After Bulkhead ...	/
<del>Bridge End INSIDE DECK</del> Bridge, Forward Bulkhead ...	<del>2" wood Slabbing Boards (full height) in steel riveted channels</del>
Forecastle Bulkhead	2 1/2" wood Lifting Boards (full height) in Steel riveted channels.
Covered Machinery Casings on Deck	Engine Room Entrance (S) wood door operated from both sides
Board on Raised Quarter Decks ...	Engineer House aft end Engineer House fore end Steel door operated from both sides.
Exposed Machinery Casings on Superstructure Decks ...	Fiddley Doors & Slits operated from both sides
Machinery Casings within Superstructures not fitted with Class I Closing Appliances ...	Fiddley Doors & Slits operated from both sides F.R. entrance (foot of companionway) aft casing the wood Door operated from both sides.
Deckhouses on Flush Deck Ships ...	/



City Barcelona

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:—

This vessel has been surveyed afloat for Keelboard Assignment only.

*omit*

Builder's name and yard number Barelay Cuth & Co Ltd No 636

Names of sister ships

Owners Ellerman Lines Ltd (Steel Line Ltd)

Fee £ 13 : 12 : 0 Received by me

opening in trunk 6' x 3" Sill 12" Bolted plate cover