

# Lloyd's Register of Shipping

## SURVEYS FOR FREEBOARD.

-3 SEP 1932

 having *Proop, Trunk, Forecastle*  
 Computation of Freeboard for *Proop, Trunk, Forecastle* Tanker
Port of Survey *Curacao, S.W.I.*Date of Survey *August 5-6, 1932.*Name of Surveyor *B. S. Whitham*Ship's Name *T.S.S. BERTA*

(Type of Superstructures.)

Nationality and Port of Registry *Dutch Willemstad*Official Number *3643*Gross Tonnage *2611*Date of Build *1927-7*Moulded Dimensions: Length *305.0* Breadth *50.2* Depth *15.0*Moulded displacement at moulded draught = 85 per cent. of moulded depth *4633* tonsCoefficient of fineness for use with Tables *.834*Particulars of Classification *+100. A1.**Carrying petroleum in bulk. Fitted for oil fuel 7.27. F.P. above 150°F. S.S. Co. No. 1-31.*

Depth for Freeboard (D)			
Moulded depth	...	...	<i>15.0</i>
Stringer plate	...	...	<i>.04</i>
Sheathing on exposed deck	...	...	<i>✓</i>
$T \left( \frac{L-S}{L} \right) =$	...	...	<i>✓</i>
Depth for Freeboard (D) =	...	...	<i>15.04</i>

Depth correction	
(a) Where D is greater than Table depth (D-Table depth) R =	
(b) Where D is less than Table depth (if allowed) (Table depth-D) R =	
$(20.33 - 15.04) \times 2.346 = 12.41$	
$\frac{5.29}{6.55} \times 12.41 = 11.84$	
If restricted by superstructures	<i>6.25</i>

Round of Beam correction	
Moulded Breadth (B)	<i>50.2</i>
Standard Round of Beam = $\frac{B \times 12}{50} =$	<i>12.048</i>
Ship's Round of Beam =	<i>12.0</i>
Difference	
Restricted to	
Correction = $\frac{\text{Diff}}{4} \times \left( 1 - \frac{S_1}{L} \right) =$	<i>NL</i>

## DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S <sub>1</sub> )	Height	Height Correction	Effective Length (E)
Poop enclosed ...	<i>87.0</i>	<i>86.50</i>	<i>6.25</i>		<i>86.50</i>
" overhang ...					
R.Q.D. enclosed					
" overhang					
Bridge enclosed...	<i>14.0</i>		<i>7.5</i>		
" overhang aft					
" overhang forward	<i>4.0</i>		<i>7.5</i>		
Fore enclosed...	<i>42.0</i>	<i>34.05</i>	<i>7.5</i>		<i>34.05</i>
" overhang	<i>5.5</i>				
Trunk aft	<i>17.0</i>	<i>126.48</i>	<i>6.25</i>	<i>6.25</i>	<i>120.69</i>
" forward					
Image opening aft	<i>55.0</i>		<i>7.5</i>		
" forward					
Total	<i>120.55</i>	<i>247.03</i>			<i>241.24</i>

Standard Height of Superstructure	<i>6.55</i>
" " R.Q.D.	<i>4.73</i>
Deduction for complete superstructure	<i>35.67</i>
Percentage covered $\frac{S}{L} =$	<i>39.52</i>
" " $\frac{S_1}{L} =$	<i>80.99</i>
" " $\frac{E}{L} =$	<i>79.10</i>
Percentage from Table, Line A.	
(corrected for absence of forecastle (if required))	<i>TANKER.</i>
Percentage from Table, Line B.	<i>74.19</i>
(corrected for absence of forecastle (if required))	
Interpolation for bridge less than 2L (if required)	
Deduction = $.7419 \times 35.67 =$	<i>26.46</i>

## SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ...	<i>40.50</i>	1		<i>40.50</i>	<i>1.0</i>	<i>6.00</i>	1		<i>6.00</i>
$\frac{1}{2}$ L from A.P. ...	<i>18.02</i>	4		<i>72.08</i>	<i>0.0</i>		4		
$\frac{2}{3}$ L " ...	<i>4.45</i>	2		<i>8.90</i>	<i>0.0</i>		2		
Amidships ...		4			<i>0.0</i>		4		
$\frac{2}{3}$ L from F.P. ...	<i>8.91</i>	2		<i>17.82</i>	<i>1.0</i>		2		
$\frac{1}{2}$ L " ...	<i>36.05</i>	4		<i>144.20</i>	<i>5.0</i>	<i>0.90</i>	4		<i>3.60</i>
F.P. ...	<i>81.00</i>	1		<i>81.00</i>	<i>25.0</i>	<i>25.50</i>	1		<i>25.50</i>
Total				<i>364.50</i>					<i>35.10</i>

$$\text{Correction} = \frac{\text{Difference between sums of products}}{18} \left( .75 - \frac{S}{2L} \right) = \frac{329.40}{18} \left( .75 - \frac{55.24}{305.0} \right) = +10.11$$

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.  
Addition for Winter and Winter North Atlantic Freeboard.

Deduction for Fresh Water.

Displacement in salt water at summer load water line

Tons per inch immersion at summer load water line

Deduction =  $\frac{\Delta}{40.1}$  inches=  $3.87 = 98 \text{ mm}$ *33/4"*

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient  $\frac{.834 + .68}{1.36} = \frac{1.514}{1.36}$ 

Depth Correction ...

Deduction for superstructures ...

Sheer correction ...

Round of Beam correction ...

Correction for Thickness of Deck amidships ...

Other corrections, scantlings, etc. ...

Summer Freeboard = *18.68*

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

Tropical Fresh Water Line above Centre of Disc	... 19 cm
Fresh Water Line	... 10 "
Tropical Line	... 9 "
Winter Line	... 9 "
Winter North Atlantic Line	... 16 "

Tropical Fresh Water Freeboard	... 28 "
Fresh Water	... 37 "
Tropical	... 38 "
Winter	... 56 "
Winter North Atlantic	... 63 "

*18.68 = 47 cm = 1'-6 3/4"*  
*28 = 11 3/4"*  
*37 = 1'-3"*  
*38 = 1'-3 1/2"*  
*56 = 1'-10"*  
*63 = 2'-1 1/4"*



# PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS									
Description of Hatchway	6.0.T.H. wing Tanks upper deck	5.0.T.H. main Tanks Trunk Top	1.0.T.H. Bunker Trunk Top	1.W.T.H. Fore Hold Trunk Top	1.W.T.H. Deck Stores Trunk Top	1.W.T.H. Stores Forecastle deck	1.W.T.H. Stores Poop deck	1.0.T.H. man-hole Boffordam Trunk Top	
Dimensions of Hatchway	6'0" x 2'6"	6' x 4'	5' x 4'	10' x 6'	3' x 3'	2'3" x 1'9"	4' x 4'	2'0" x 1'3"	
COAMINGS	Height above Deck	3'6"	9" BA	9" BA	9" BA	9" BA	9" BA	9" BA	
	Thickness	.40	.46	.46	.46	.46	.46	.46	
	Stiffeners	see below	✓	✓	✓	✓	✓	✓	
	Brackets, Stays	none	✓	✓	✓	✓	✓	✓	
HATCH BEAMS	Number	2 batten hatches	none	none	50 top plate with 4 stiffeners	none	none	none	
	Spacing	fitted with 3' x 3' flat bar riveted around top of coaming	none	none	5' x 3' x 4' and 26 toggles access hatch 3' x 2' 4" of 9" BA and 50 top plate with 8 toggles	none	none	none	
	Scantling and Sketch	see below	none	none	none	none	none	none	
	Bearing Surface	.60 top plate hinged with 1/4 toggles	none	none	none	none	none	none	
FORE AND AFTERS	Number	4 remaining	none	none	none	none	none	none	
	Spacing	hatches fitted with .80 top plate bolted to angle riveted around top of coaming	none	none	none	none	none	none	
	Unsupported Lengths	Horizontal stiffener	none	none	none	none	none	none	
	Scantling* and Sketch	see below	none	none	none	none	none	none	
HATCH COVERS	Material	3' x 3' x .40	Steel .60	Steel .60	Steel .50	Steel .50	Steel .60	Steel .50	
	Thickness	manholes	Hinged .0.T.	Hinged .0.T.	Hinged .0.T.	Hinged .0.T.	Hinged .0.T.	Hinged .0.T.	
	How fitted	fitted to top plates	16 toggles	14 toggles	And 11.T.	8 toggles	8 toggles	12 toggles	
	Bearing Surface	see below	16 toggles	14 toggles	And 11.T.	8 toggles	8 toggles	12 toggles	
Spacing of Cleats	✓	✓	✓	✓	✓	✓	✓	✓	
Number of Tarpaulins	✓	✓	✓	✓	✓	✓	✓	✓	
<p>*Are wood fore and afters steel shod at all bearing surfaces?</p> <p>Are battens and wedges efficient and in good condition?</p> <p>Are tarpaulins in good condition and in accordance with rule requirements?</p> <p>Are lashings provided in accordance with rule requirements?</p>									

Particulars of fiddle, funnel and ventilator coamings:—

Engine Room and Fire-room ventilators and funnel in efficient condition.  
 Engine Room sky-lights of steel strongly constructed and in efficient condition.

Particulars of Flush Bunker Scuttles:—

none

Particulars of Companionways:—

one steel companionway on forecastle deck 2'9" x 4'0" x 6'0" leading to an enclosed forecastle. Wood door 2'3" x 5'9" with 14" sill and capable of being manipulated from both sides.  
 one steel companionway on Trunk Top 5'6" x 10' x 7'6" high leading to pump room. Door of steel 2' x 5' with 18" sill and capable of being manipulated from both sides.

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

Forecastle deck 8-8 inch dia. 36" coaming x 1/4" to crew spaces  
 Trunk Deck 2-14 inch " 36" coaming x 3/8" to Fore Hold  
 " " 2-18 inch " 36" coaming x 3/8" to Pump Room.  
 Poop Deck 4-8 inch " 36" coaming x 1/4" to Refrig & Stores  
 " " 2-24 inch " 16 ft coaming x 3/8" to Stores & Engine Room. Bt to after end of deck house.

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

Forecastle Deck 1-4 inch dia. 6" above deck to Fore Peak Tank.  
 " " 5-6" x 4" dia. 36" " " " No. 3. P & S.  
 Trunk Top 2-4 inch dia. 6" " " " Boffordam P & S.  
 " " 3-4 inch dia. 18" " " " oil fuel Tanks.  
 Poop Deck 1-4 inch dia. 20" " " " after Peak Tank.  
 Freeboard Deck 4-4 inch dia. 5' above deck to Fore and after wing Tanks. 6-2" dia with valve 3'3" above deck from wing Tanks hatch coamings to air vent to mast-head.  
 Poop Deck 2-2 1/2" dia. 30" above deck to F.W. tanks.

Particulars of Gangway Cargo and Coaling Ports:—

None





Particulars of Scuppers and Sanitary Discharge Pipes:— 2-6 inch and 3-4 inch storm discharge valves on ships side from W.C. all discharges from wash basins etc in Poop, Captain's Quarters and Forecastle fitted with storm valves on ships side and efficient traps at the inboard end. Two scuppers led from after Peak flat to Engine room bilge. all storm valve chests of cast iron with steel covers, copper valves and pins.

Particulars of Side Scuttles:— all side scuttles in Forecastle and Poop fitted with efficient hinged dead-lights permanently attached.

Particulars of Guard Rails:— Freeboard Deck 3'6" high - 3 rails stanchions spaced 5-feet.  
Forecastle Deck (part rails) " " " " " "  
Trunk Top " " " " " "  
Poop Deck " " " " " "

Particulars of Gangways, Lifelines, etc.:—

The Trunk Top forms a gang-way between the Forecastle and Poop

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 ... ..	open rails on all weather decks.			✓		
Forward Well ... ..						
State position of each freeing port ... .. } After Well :— (F. and A. position and height above deck edge) } Forward Well :— State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such :—  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 ...	✓	34	6 X 3 X 36 BA	24"	Bkt	✓	✓	✓
Raised Quarter Deck Bulkhead ...	38 angle	30	3 X 2 1/2 X 30	24" to 33"	Bkt at top	2'3" X 5'6"	18"	7'6"
Bridge, After Bulkhead ...	✓	✓	5 X 3 X 30	✓	✓	✓	✓	✓
Bridge, Forward Bulkhead ...	6 X 3 X 30 angle	30 & 25	3 1/2 X 3 X 34	27" to 33"	Bkt	2'3" X 5'3"	18"	22'6"
Forecastle Bulkhead ...	40	30	4 X 3 X 30	24"	Bkt	none comp'd	✓	4'6"
Trunk, Aft ...	44	42	5 1/2 X 3 X 30 BA	24"	Bkt	✓	✓	6'3"
Trunk, Forward ...	44	42	5 1/2 X 3 X 30 BA	24"	Bkt	✓	✓	6'3"
Exposed Machinery Casings on Freeboard or Raised Quarter Decks ...	✓	✓	✓	✓	✓	✓	✓	✓
Exposed Machinery Casings on Superstructure Decks ...	38	30	3 X 2 1/2 X 38	24"	✓	2'3" X 5'6"	18"	7'6"
Machinery Casings within Superstructures not fitted with Class I Closing Appliances ...	✓	✓	✓	✓	✓	✓	✓	✓
Deckhouses on Flush Deck Ships ...	✓	✓	✓	✓	✓	✓	✓	✓

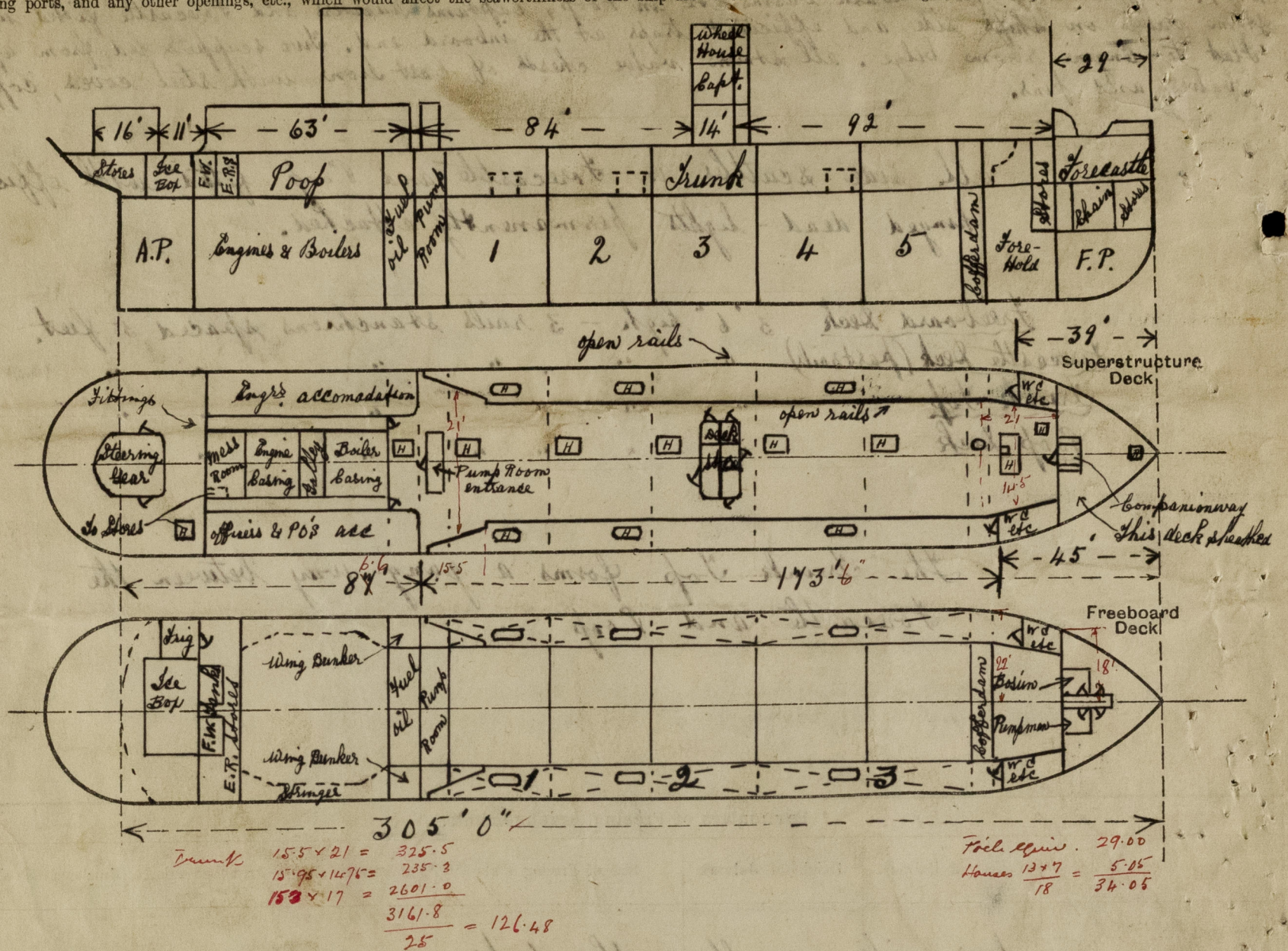
Particulars of Closing Appliances (state if capable of being manipulated from both sides).

Poop Bulkhead ...	No openings
Raised Quarter Deck Bulkhead ...	Steel doors capable of being manipulated from both sides.
Bridge, After Bulkhead ...	" " " " " " " "
Bridge, Forward Bulkhead ...	" " " " " " " "
Forecastle Bulkhead ...	No openings. Wood door on company capable of being manipulated both sides.
Exposed Machinery Casings on Freeboard or Raised Quarter Decks ...	Steel door capable of being manipulated from both sides.
Exposed Machinery Casings on Superstructure Decks ...	Steel door capable of being manipulated from both sides.
Machinery Casings within Superstructures not fitted with Class I Closing Appliances ...	all doors within superstructure in efficient condition.
Deckhouses on Flush Deck Ships ...	Steel doors with 18" sill to W.C's on freeboard deck. Capable of being manipulated both sides.

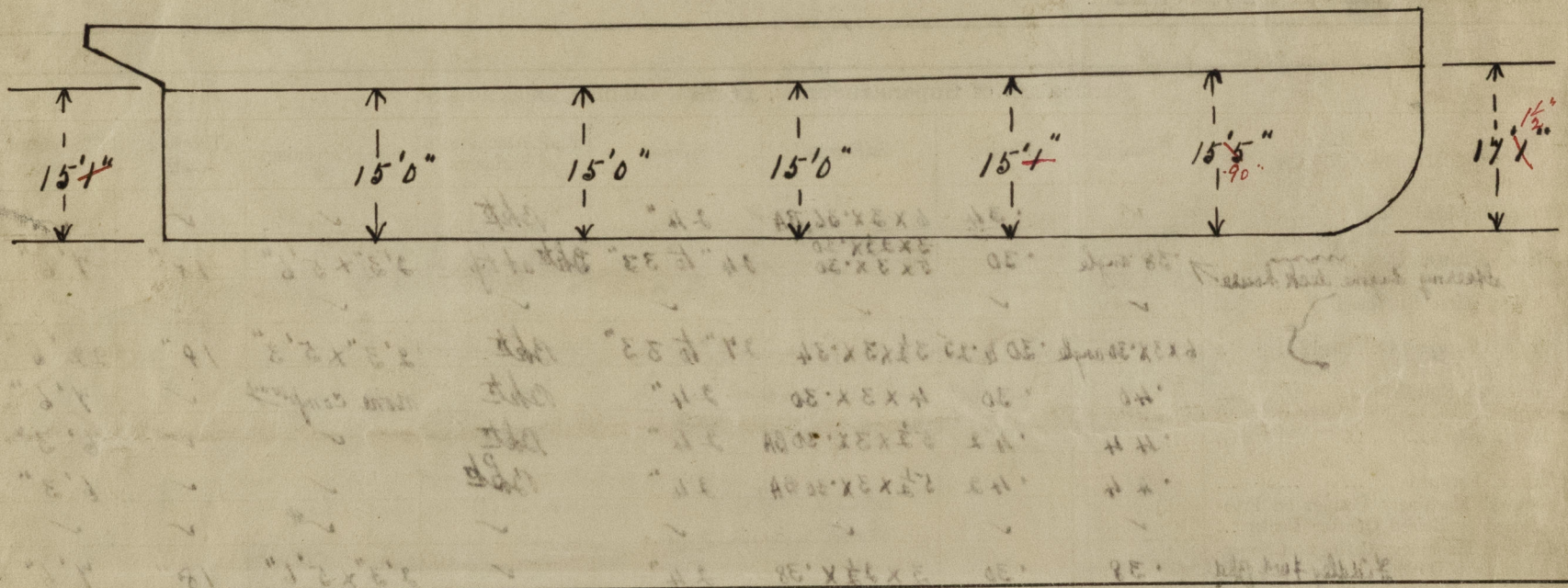


BERTA

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:—



Builder's name and yard number Harland & Wolff Ltd No. 798

Names of sister ships J. S. S. "Brigida"

Owners Curacao'sche Scheepvaart Maatschappij

Fee 74 150.00 Received by me \_\_\_\_\_