

# Lloyd's Register of Shipping.

## SURVEYS FOR FREEBOARD.

Computation of Freeboard for Steamer, Sailing Ship, Tanker  
having Roop & Bridge & Foll.

(Type of Superstructures.) B&F m. r. 27

Port of Survey Hamburg/Kiel.

Date of Survey 1 September, 1936.

Name of Surveyor C.H.E. Priess.

Particulars of Classification \*100 A1  
*Carrying oil tank  
position 150° F.  
in bulk  
compliance*

Ship's Name <u>"Congonian"</u>	Nationality and Port of Registry <u>U.K. Liverpool.</u>	Official Number <u>164299</u>	Gross Tonnage <u>5065</u>	Date of Build <u>Sept. 1936.</u>
Moulded Dimensions: Length <u>395.0'</u> Breadth <u>55.0'</u> Depth <u>27.0'</u>				
Moulded displacement at moulded draught = 85 per cent. of moulded depth <u>11012</u> tons				
Coefficient of fineness for use with Tables <u>0.773</u>				

<p>Depth for Freeboard (D)</p> <p>Moulded depth ... .. <u>27.0'</u></p> <p>Stringer plate ... .. <u>.06'</u></p> <p>Sheathing on exposed deck <math>T \left( \frac{L-S}{L} \right) =</math></p> <p>Depth for Freeboard (D) = <u>27.06'</u></p>	<p>Depth correction</p> <p>(a) Where D is greater than Table depth (D-Table depth) R = <math>(27.06 - 26.33)3 = +2.19</math></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) <u>55.0"</u></p> <p>Standard Round of Beam = <math>\frac{B \times 12}{50} = 13.20</math></p> <p>Ship's Round of Beam = <u>13.19"</u></p> <p>Difference <u>Deficient .01</u></p> <p>Restricted to</p> <p>Correction = <math>\frac{\text{Diff}}{4} \times \left(1 - \frac{S_1}{L}\right) = \frac{.01}{4} \times .3698 = .0009</math></p>
--	---	---

## DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S <sub>1</sub> )	Height	Height Correction	Effective Length (E)
Poop enclosed ... ..	<u>144.10</u>	<u>144.10</u>	<u>7.5'</u>		<u>144.10</u>
" overhang ... ..					
R.Q.D. enclosed ... ..					
" overhang ... ..					
Bridge enclosed, equivalent	<u>25.70</u>	<u>25.70</u>	<u>7.0'</u>	$\times \frac{7.45}{7}$	<u>24.15</u>
" overhang aft ... ..	<u>2.65</u>	<u>1.99</u>			<u>1.87</u>
" overhang forward	<u>1.53</u>	<u>.76</u>			<u>.71</u>
F'cle enclosed, equivalent	<u>76.37</u>	<u>76.37</u>	<u>7.0'</u>	$\times \frac{7.45}{7}$	<u>71.76</u>
" overhang ... ..					
Trunk aft ... ..					
" forward ... ..					
Tonnage opening aft ... ..					
" " forward					
Total ... ..	<u>250.35</u>	<u>248.92</u>			<u>242.59</u>

Standard Height of Superstructure	<u>7.45</u>
" " R.Q.D.	<u>✓</u>
Deduction for complete superstructure	<u>41.67</u>
Percentage covered $\frac{S}{L} =$	<u>63.38</u>
" " $\frac{S_1}{L} =$	<u>63.02</u>
" " $\frac{E}{L} =$	<u>61.42</u>
Percentage from Table, Line A. (corrected for absence of forecastle (if required))	<u>48.41</u>
Percentage from Table, Line B. (corrected for absence of forecastle (if required))	
Interpolation for bridge less than 2L (if required)	<u>48.41</u>
Deduction =	<u>41.67 \times 48.41 = -20.18</u>

## SHEER CORRECTION.

Station	Standard Ordinate	S M	Product	Actual Ordinate	Effective Ordinate	S M	Product	Mean actual sheer aft =	Mean standard sheer aft =
A.P. ... ..	<u>49.50</u>	<u>1</u>	<u>49.50</u>	<u>51.12</u>	<u>51.12</u>	<u>1</u>	<u>51.12</u>	<u>Excess</u>	
$\frac{1}{2}L$ from A.P. ... ..	<u>22.03</u>	<u>4</u>	<u>88.12</u>	<u>23.16</u>	<u>23.16</u>	<u>4</u>	<u>92.64</u>	<u>Excess</u>	
$\frac{3}{4}L$ " ... ..	<u>5.44</u>	<u>2</u>	<u>10.88</u>	<u>6.48</u>	<u>6.48</u>	<u>2</u>	<u>12.96</u>		
Amidships ... ..		<u>4</u>		<u>0</u>		<u>4</u>			
$\frac{3}{4}L$ from F.P. ... ..	<u>10.89</u>	<u>2</u>	<u>21.78</u>	<u>11.40</u>	<u>11.40</u>	<u>2</u>	<u>22.80</u>		
$\frac{1}{2}L$ " ... ..	<u>44.05</u>	<u>4</u>	<u>176.20</u>	<u>44.52</u>	<u>44.52</u>	<u>4</u>	<u>178.08</u>		
F.P. ... ..	<u>99.00</u>	<u>1</u>	<u>99.00</u>	<u>105.72</u>	<u>105.72</u>	<u>1</u>	<u>105.72</u>		
Total ... ..			<u>445.48</u>				<u>463.32</u>		

Correction =  $\frac{\text{Difference between sums of products}}{18} = \frac{17.84}{18} = .99$

If limited on account of midship superstructure. No allowance

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

<p>Deduction for Tropical Freeboard.</p> <p>Addition for Winter and Winter North Atlantic Freeboard.</p> <p>Depth to Freeboard Deck = <u>27.06</u></p> <p>Summer freeboard = <u>4.73</u></p> <p>Moulded draught (d) = <u>22.33</u></p> <p>Deduction for Tropical freeboard and addition for Winter freeboard = <math>\frac{d}{4}</math> inches = <u>5.58 = 5\frac{1}{2}</u></p> <p>Addition for Winter North Atlantic Freeboard (if required) =</p>	<p>Deduction for Fresh Water.</p> <p>Displacement in salt water at summer load water line</p> <p><math>\Delta = 10816</math></p> <p>Tons per inch immersion at summer load water line</p> <p><math>T = 45.29</math></p> <p>Deduction = <math>\frac{\Delta}{40T}</math> inches = <u>5.97</u></p> <p>= <u>6</u></p>	<p>TABULAR FREEBOARD corrected for Flush Deck (if required)</p> <p>Correction for coefficient <math>\frac{773+68}{136} = \frac{1453}{136}</math></p> <table border="1"> <tr> <th></th> <th>+</th> <th>-</th> </tr> <tr> <td>Depth Correction</td> <td><u>2.19</u></td> <td></td> </tr> <tr> <td>Deduction for superstructures</td> <td></td> <td><u>20.18</u></td> </tr> <tr> <td>Sheer correction</td> <td></td> <td><u>0.06</u></td> </tr> <tr> <td>Round of Beam correction</td> <td></td> <td></td> </tr> <tr> <td>Correction for Thickness of Deck amidships</td> <td></td> <td></td> </tr> <tr> <td>Other corrections, scantlings, etc.</td> <td></td> <td></td> </tr> <tr> <td></td> <td><u>2.19</u></td> <td><u>20.24</u></td> </tr> </table> <p>Summer Freeboard = <u>56.69</u></p>		+	-	Depth Correction	<u>2.19</u>		Deduction for superstructures		<u>20.18</u>	Sheer correction		<u>0.06</u>	Round of Beam correction			Correction for Thickness of Deck amidships			Other corrections, scantlings, etc.				<u>2.19</u>	<u>20.24</u>
	+	-																								
Depth Correction	<u>2.19</u>																									
Deduction for superstructures		<u>20.18</u>																								
Sheer correction		<u>0.06</u>																								
Round of Beam correction																										
Correction for Thickness of Deck amidships																										
Other corrections, scantlings, etc.																										
	<u>2.19</u>	<u>20.24</u>																								

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

Tropical Fresh Water Line above Centre of Disc ... ..	<u>11\frac{1}{2}</u>	Tropical Fresh Water Freeboard ... ..	<u>4'-8\frac{3}{4}"</u>
Fresh Water Line " " ... ..	<u>6</u>	Fresh Water " " ... ..	<u>3'-9\frac{1}{4}"</u>
Tropical Line " " ... ..	<u>5\frac{1}{2}</u>	Tropical " " ... ..	<u>4'-2\frac{3}{4}"</u>
Winter Line below " " ... ..	<u>5\frac{1}{2}</u>	Winter " " ... ..	<u>4'-3\frac{1}{4}"</u>
Winter North Atlantic Line " " ... ..	<u>✓</u>	Winter North Atlantic " " ... ..	<u>5'-2\frac{1}{4}"</u>



# PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS									
Description of Hatchway			Hatch to Forehold	Hatches to 1st Tank	Hatches to Oil tank	Hatch to Afterhold			
Dimensions of Hatchway			Feet.	U. deck.	Upper-deck	Upper-deck	Peep	U. deck.	
COAMINGS	{	Height above Deck	32"	9"	30"	30"	32"	9"	
		Thickness	{	Sides	.47	5 9 3/4 x .56	.40	.47	5 9 3/4 x .56
		Stiffeners	5 11 3/4 x .50	%	1 7" x .40	%	5 11 3/4 x .50	%	
		Brackets, Stays	2.	%	1.	%	2.	%	
HATCH BEAMS	{	Number	4	4		4	4		
		Spacing	5' 5"	5' 5"		5' 8"	5' 8"		
		Scantling and Sketch	14 1/4 x 34	14 1/4 x 34	%	12" x 32	12" x 32	%	%
		Bearing Surface	3 1/2 x 1 1/4	3 1/2 x 1 1/4		3 1/2 x 1 1/4	3 1/2 x 1 1/4		
FORE AND AFTERS	{	Number							
		Spacing							
		Unsupported Lengths							
		Scantling* and Sketch	%	%	%	%	%	%	
		Bearing Surface							
HATCH COVERS	{	Material	Pine	Pine	Steel. Stiffen.	Steel. Stiffen.	Pine	Pine	
		Thickness	2 1/2"	2 1/2"	.50	.50	2 1/2"	2 1/2"	
		How fitted	Longit.	Longit.	Ringed	Ringed	Longit.	Longit.	
		Bearing Surface	3 x 3 1/2"	3 x 3 1/2"	with Packing	with Packing	3 x 3 1/2"	3"	
Spacing of Cleats			24"	20"			24"	20"	
Number of Tarpaulins			2	1	%	%	2	1	
*Are wood fore and afters steel shod at all bearing surfaces? Are battens and wedges efficient and in good condition? Are tarpaulins in good condition and in accordance with rule requirements? Are lashings provided in accordance with rule requirements?									

Particulars of fiddle, funnel and ventilator coamings:—

*Fiddle-top 40" above Board-deck.*  
*Motor-casing-top in height of Board-deck.*  
*Funnel & Ventilator coamings efficiently riveted to deck.*  
*All openings fitted with steel ringed covers.*

Particulars of Flush Bunker Scuttles:—

*None.*

Particulars of Companionways:—

*Companion on Fiddle deck strongly built of steel plates and angles and efficiently riveted to deck.*  
*Opening closed with a ringed Teak door. Sill 24" high.*  
*All other Companionways situated inside superstructures.*

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

*No Ventilators in exposed position on Freeboard-deck.*  
*Ventilator coamings on Fiddle-deck 36" x 40."*  
*Ventilator coamings on Bridge Peep 30" x 32 to 40."*  
*All coamings efficiently riveted to deck and fitted with wood covers & canvas caps.*

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

*All Air-pipes are of substantial construction, Rule height and fitted with gauge covers, respect. wood plugs & canvas caps.*

Particulars of Gangway Cargo and Coaling Ports:—

*None.*

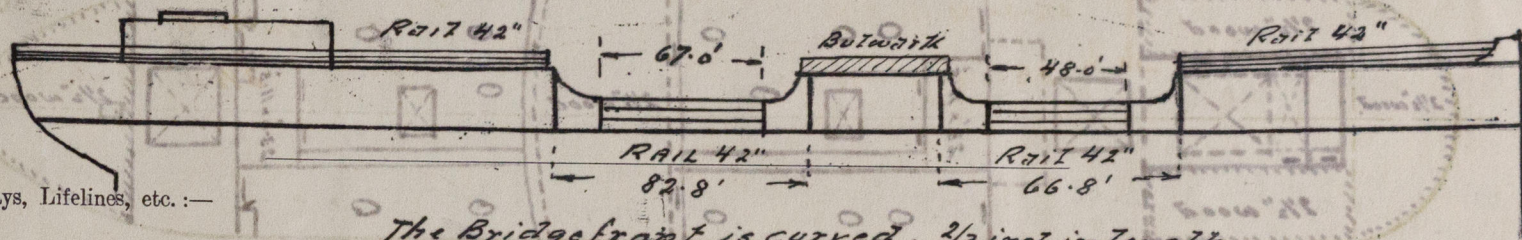




Particulars of Scuppers and Sanitary Discharge Pipes — *Forward Well 2 Scuppers each side 8" x 3" x 5" φ.*  
*After Well 2 Scuppers each side 8" x 3" x 5" φ.*  
*All sanitary discharge-pipes are fitted with storm valves,*  
*also overboard Scuppers from Poop & Fidd spaces.*

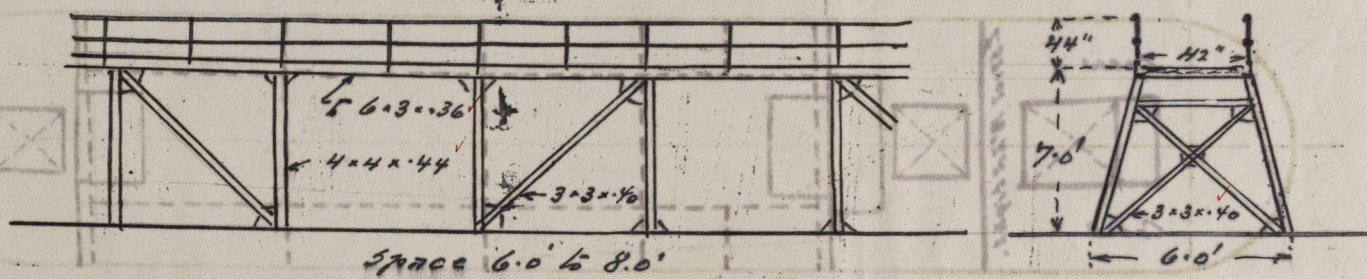
Particulars of Side Scuttles: *No Side Scuttles below Freeboard-deck.*  
*Scuttles in Poop & Bridge & Fidd-spaces fitted*  
*with hinged dead lights.*

Particulars of Guard Rails:—



Particulars of Gangways, Lifelines, etc.:—

*The Bridge front is curved. 2/3 inch in length.*



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 ... 82.8'	15.8'	42"	None 67.0' Rail		Above 50% Rail	
Forward Well 66.8'	18.8'	42"	None 48.0' Rail			
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 ...	6 3/4 x 3 1/2 x 40	.44	5 9 x 3 1/2 x 50	30"	Lugs 8 x 3 1/2 x 44	2a 37" x 51"	23 1/2"	7.44
Raised Quarter Deck Bulkhead ...	.	.	.	.	.	.	.	.
Bridge, After Bulkhead ...	7 x 3 1/2 x 58	.30	5 4 x 2 1/2 x 30 5 5 1/2 x 2 1/2 x 36	25-27"	.	2a 37" x 51"	23 1/2"	7.0'
Bridge, Forward Bulkhead ...	7 x 3 1/2 x 58	.44	5 9 x 3 1/2 x 44	26"	Lugs 8 x 3 1/2 x 44	1a 57" x 32"	18"	7.0'
Forecastle Bulkhead ...	7 x 3 1/2 x 58	.30	5 4 x 2 1/2 x 30 5 5 1/2 x 2 1/2 x 36	27"	.	2a 37" x 51"	23 1/2"	7.0'
Trunk, Aft ... Deckhouse	7 x 3 1/2 x 58	.44	5 9 x 3 1/2 x 44	30"	Lugs 8 x 3 1/2 x 44	2a 24 x 57"	18"	7.44'
Trunk, Forward ... Deckhouse	7 x 3 1/2 x 58	.30	5 4 x 3 x 36	30"	.	2a 27 x 61"	18"	7.0'
Exposed Machinery Casings on Free-board or Raised Quarter Decks ...	.	.	.	.	.	.	.	.
Exposed Machinery Casings on Super-structure Decks ... Poop...	19" x 82	.30	4 4 x 3 x 36	27"	Brackets.	2a 57" x 24"	18"	7.25'
Machinery Casings within Superstructures not fitted with Class I Closing Appliances ...	.	.	.	.	.	.	.	.
Deckhouses on Flush Deck Ships ...	.	.	.	.	.	.	.	.

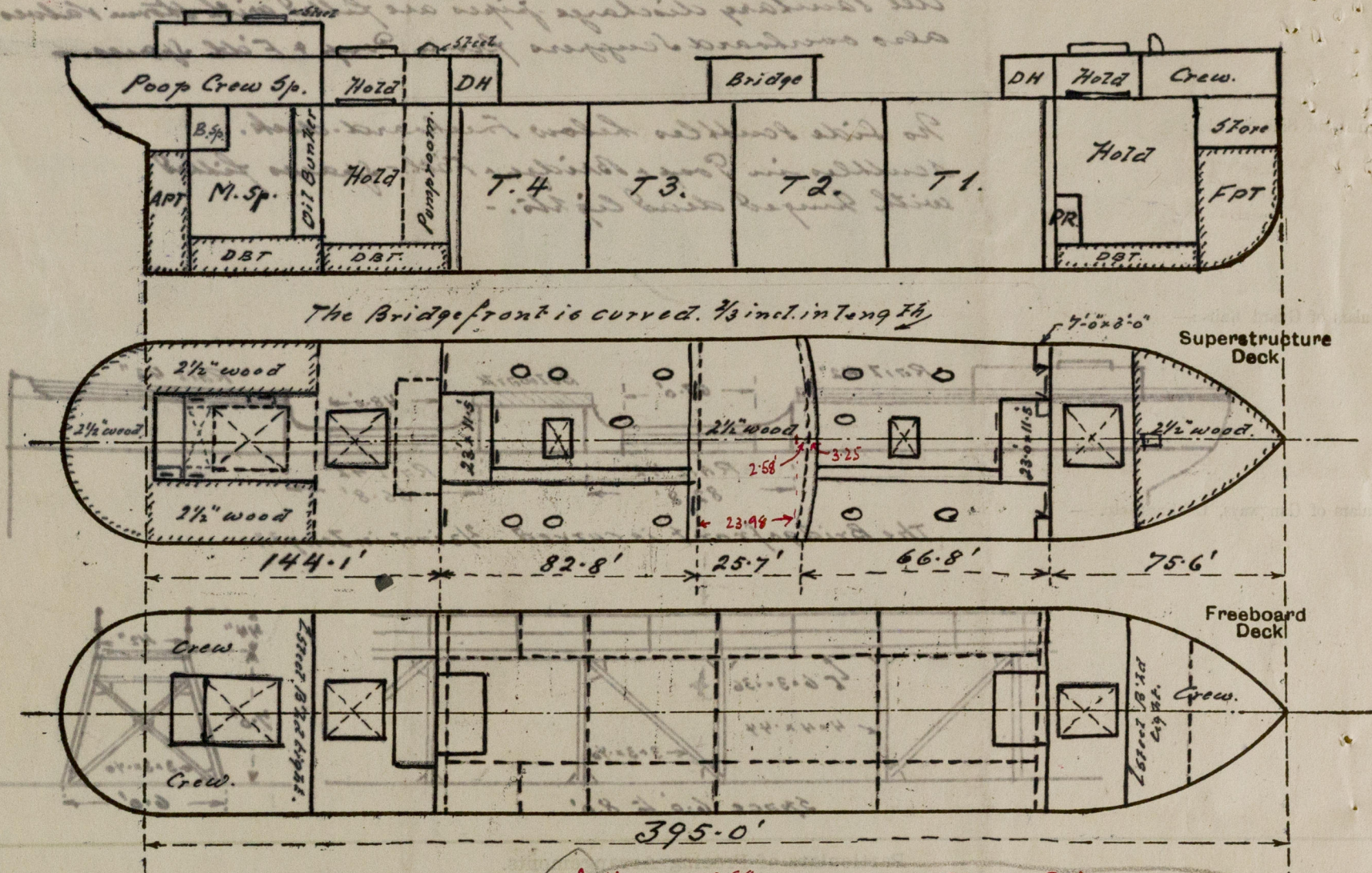
Particulars of Closing Appliances (state if capable of being manipulated from both sides).

Poop Bulkhead ...	2 Tonnage openings, portable steel plates with 10 Hookbolts.
Raised Quarter Deck Bulkhead ...	1 steel hinged watertight door with 6 Turnbuckles, from both sides.
Bridge, After Bulkhead ...	2 steel hinged watertight doors with 6 Turnbuckles, from both sides.
Bridge, Forward Bulkhead ...	2 Tonnage openings, portable steel plates with 10 Hookbolts.
Forecastle Bulkhead ...	1 steel hinged watertight door with 6 Turnbuckles, from both sides.
Exposed Machinery Casings on Free-board or Raised Quarter Decks ...	2 Tonnage openings, portable steel plates with 10 Hookbolts.
Exposed Machinery Casings on Super-structure Decks ... Poop...	1 to boiler space, steel hinged w.t. door with turnbuckles, from both sides.
Machinery Casings within Superstructures not fitted with Class I Closing Appliances ...	1 to Poop-space, hinged Teak door to be opened from both sides.
Deckhouses on Flush Deck Ships ...	2 hinged Teak doors to be opened from both sides.



# Congorian

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:—



Bridge 23.98  
Bow 2 1/2 x 2.58 = 1.72  
25.70 equivalent

File 7x3 = .77  
27.16  
75.60  
76.37 equivalent

Overlying tanks 23.98 + 3.25 = 27.23  
- 25.70  
1.53 equivalent

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

Vessel with two longitudinal bulkheads in way of Cargo-Oil tanks. Transverse framing at sides and longitudinal framing at upper deck and bottom in way of Oil tanks. —  
One ord. Cargo Hold forward and aft. —  
The Steel bulkheads between crew-spaces and cargo-rooms in Poop & Fore are intact. —

Vessel will be completed on the 25th of September.

Builder's name and yard number Hawatowerke A.G. Kiel

Names of sister ships ?

Owners United Africa Co. Ltd. London.

Fee £120. Received by me on completion.