

29 JUL 1932

Lloyd's Register of Shipping.  
SURVEYS FOR FREEBOARD.

52765

Computation of Freeboard for Steamer, Sailing Ship, Tanker  
having *Raised Quarter Deck, Bridge and Forecastle.*Port of Survey *Glasgow*Date of Survey *27th July 1932*Name of Surveyor *James R. Clark*Particulars of Classification *100 A1**S.S. No. 2-30*

(Type of Superstructures.)

Ship's Name

Nationality and Port of Registry

Official Number

Gross Tonnage

Date of Build

*OBSIDIAN**British  
Glasgow**145709**811  
819 AL**1922*Moulded Dimensions: Length *188.6*Breadth *30.0*Depth *14.58*Moulded displacement at moulded draught = 85 per cent. of moulded depth *1472* tonsCoefficient of fineness for use with Tables *735*

## Depth for Freeboard (D)

Moulded depth ... *14.58*Stringer plate *R.Q.D. 40"* ... *.03*

Sheathing on exposed deck

$$T \left( \frac{L-S}{L} \right) =$$

Depth for Freeboard (D) = *14.61*

## Depth correction

(a) Where D is greater than Table depth  
(D—Table depth) R =

$$(14.61 - 12.57) \cdot 1451 = +296$$

(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) *30.0*

$$\text{Standard Round of Beam} = \frac{B \times 12}{50} = 7.2$$

$$\text{Ship's Round of Beam} = 7.2$$

$$\text{Difference} = 7.2 - 3 = 4.2$$

Restricted to

$$\text{Correction} = \frac{\text{Diff}^e}{4} \times \left( 1 - \frac{S_1}{L} \right) = \frac{4.2}{4} (1 - .7534) = .31$$

## 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 ...     | <i>108.66</i>           | <i>108.66</i>                                | <i>3.625</i> |                   | <i>108.66</i>        |
| „ overhang ...          |                         |  |              |                   |                      |
| Bridge enclosed ...     | <i>11.0</i>             | <i>11.00</i>                                 | <i>7.0</i>   |                   | <i>11.00</i>         |
| „ overhang aft ...      |                         |  |              |                   |                      |
| „ overhang forward ...  | <i>21.34</i>            | <i>21.34</i>                                 |              |                   | <i>21.34</i>         |
| F'cle. enclosed ...     | <i>23.1</i>             |  | <i>7.0</i>   |                   |                      |
| „ overhang ...          | <i>2.16</i>             | <i>1.08</i>                                  |              |                   | <i>1.08</i>          |
| Trunk aft ...           |                         |  |              |                   |                      |
| „ forward ...           |                         |  |              |                   |                      |
| Tonnage opening aft ... | <i>143.16</i>           |  |              |                   |                      |
| „ „ forward ...         | <i>142.16</i>           |  |              |                   |                      |
| Total ...               |                         | <i>142.08</i>                                |              |                   | <i>142.08</i>        |

Standard Height of Superstructure *6.0*„ „ R.Q.D. *3.59*Deduction for complete superstructure *24.86*

$$\text{Percentage covered } \frac{S}{L} = 75.92$$

$$\text{„ } \frac{S_1}{L} = 75.34$$

$$\text{„ } \frac{E}{L} = 75.34$$

Percentage from Table, Line A.

(corrected for absence of forecastle (if required))

*69.57*

Percentage from Table, Line B.

(corrected for absence of forecastle (if required))

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

$$\text{Deduction} = 24.86 + 69.57 = 17.29$$

## SHEER CORRECTION.

Act. Ht. R.Q.D. = *3.625*Stand. „ = *3.590**.035 = .42*

| Station                       | Standard Ordinate | S | M | Product       | Actual Ordinate | Effective Ordinate | S | M | Product       |
|-------------------------------|-------------------|---|---|---------------|-----------------|--------------------|---|---|---------------|
| A.P. ...                      | <i>28.86</i>      | 1 |   | <i>28.86</i>  | <i>34.0</i>     | <i>34.42</i>       | 1 |   | <i>34.42</i>  |
| $\frac{1}{2}$ L from A.P. ... | <i>12.84</i>      | 4 |   | <i>51.36</i>  | <i>13.5</i>     | <i>16.2</i>        | 4 |   | <i>64.80</i>  |
| $\frac{2}{3}$ L „ ...         | <i>3.17</i>       | 2 |   | <i>6.34</i>   | <i>3.0</i>      | <i>4.04</i>        | 2 |   | <i>8.08</i>   |
| Amidships ...                 |                   | 4 |   |               | <i>0</i>        |                    | 4 |   |               |
| $\frac{2}{3}$ L from F.P. ... | <i>6.34</i>       | 2 |   | <i>12.68</i>  | <i>6.0</i>      | <i>7.39</i>        | 2 |   | <i>14.78</i>  |
| $\frac{1}{2}$ L „ ...         | <i>25.68</i>      | 4 |   | <i>102.72</i> | <i>26.5</i>     | <i>29.62</i>       | 4 |   | <i>118.48</i> |
| F.P. ...                      | <i>57.72</i>      | 1 |   | <i>57.72</i>  | <i>63.0</i>     | <i>63.00</i>       | 1 |   | <i>63.00</i>  |
| Total ...                     |                   |   |   | <i>259.68</i> |                 |                    |   |   | <i>303.56</i> |

$$\text{Correction} = \frac{\text{Difference between sums of products}}{18} \left( .75 - \frac{S}{2L} \right) = \frac{259.68}{43.68} \left( .75 - .3796 \right) = .90$$

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.

Depth to Freeboard Deck = *18.24*Summer freeboard = *4.19*Moulded draught (d) = *14.05*

## Deduction for Tropical freeboard and addition for

Winter freeboard =  $\frac{d}{4}$  inches = *3.51 = 3\frac{1}{2}*

## Addition for Winter North Atlantic Freeboard (if

required) = *2*

## Deduction for Fresh Water.

Displacement in salt water at summer load water line

$$\Delta = 1709$$

Tons per inch immersion at summer load water line

$$T = 11.52$$

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

$$= 3.71$$

$$= 3\frac{3}{4}$$

## TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient  $\frac{735 + 68}{1.36} = \frac{1.415}{1.36}$ Depth Correction ... *2.96*Deduction for superstructures ... *17.29*Sheer correction ... *.90*Round of Beam correction ... *.02*Correction for Thickness of Deck amidships ... *43.50*

Other corrections, scantlings, etc. ...

$$46.46 - 18.91 = 27.55$$

$$\text{Summer Freeboard} = 50.29$$

SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, *Raised Quarter*Tropical Fresh Water Line above Centre of Disc ... *7\frac{1}{2}*Fresh Water Line „ „ ... *3\frac{3}{4}*Tropical Line „ „ ... *3\frac{1}{2}*Winter Line below „ „ ... *3\frac{1}{2}*Winter North Atlantic Line „ „ ... *5\frac{1}{2}*Tropical Fresh Water Freeboard ... *4-2\frac{1}{4}*Fresh Water „ „ ... *3-7*Tropical „ „ ... *3-10\frac{1}{2}*Winter „ „ ... *4-5\frac{3}{4}*Winter North Atlantic „ „ ... *4-7\frac{3}{4}*

2 AUG 1932

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# PARTICULARS OF PROTECTION TO OPENINGS, ETC.

| HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS |                       |                  |                  |  |  |  |  |  |  |
|---|-----------------------|------------------|------------------|--|--|--|--|--|--|
| Description of Hatchway                         |                       | N <sup>o</sup> 1 | N <sup>o</sup> 2 |  |  |  |  |  |  |
| Dimensions of Hatchway                          |                       | 34' 10" x 16' 6" | 34' 10" x 16' 6" |  |  |  |  |  |  |
| COAMINGS  | Height above Deck     | 36"              | 36"              |  |  |  |  |  |  |
|   | Thickness             | 4 1/2"           | 4 1/2"           |  |  |  |  |  |  |
|   | Stiffeners            | 7" BA.           | 7" BA.           |  |  |  |  |  |  |
|   | Brackets, Stays       | 3 B.P. STAYS     | 3 B.P. STAYS     |  |  |  |  |  |  |
|   |                       |                  |                  |  |  |  |  |  |  |
| HATCH BEAMS                                     | Number                | 6                | 6                |  |  |  |  |  |  |
|   | Spacing               | 4' 9 3/8"        | 4' 9 3/8"        |  |  |  |  |  |  |
|   | Scantling and Sketch  | 11 1/2" x 3 1/2" | 11 1/2" x 3 1/2" |  |  |  |  |  |  |
|   |                       | 4 @              | 4 @              |  |  |  |  |  |  |
|   | Bearing Surface       | 3"               | 3"               |  |  |  |  |  |  |
| FORE AND AFTERS                                 | Number                |                  |                  |  |  |  |  |  |  |
|   | Spacing               |                  |                  |  |  |  |  |  |  |
|   | Unsupported Lengths   |                  |                  |  |  |  |  |  |  |
|   | Scantling* and Sketch | NONE.            |                  |  |  |  |  |  |  |
|   | Bearing Surface       |                  |                  |  |  |  |  |  |  |
| HATCH COVERS                                    | Material              | W.P.             | W.P.             |  |  |  |  |  |  |
|   | Thickness             | 2 1/2"           | 2 1/2"           |  |  |  |  |  |  |
|   | How fitted            | F.A.             | F.A.             |  |  |  |  |  |  |
|   | Bearing Surface       | 3"               | 3"               |  |  |  |  |  |  |
| Spacing of Cleats                               |                       | 24"              | 24"              |  |  |  |  |  |  |
| Number of Tarpaulins                            |                       | 2                | 2                |  |  |  |  |  |  |

*Small Hatches: On R.Q. St. to A.P. Store. 22" x 20" 26" coaming, 2 1/2" cover, 2 1/2" bearing. Cleats spaced 12", 2 Tarpaulins. On bearing up to coal shoot 5' 7" x 11' 3", 8" B.A. coaming, 2 1/2" cover, laid F.A., 3" bearing, cleats spaced 26", 2 Tarpaulins.*

\*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? *King bolts fitted at Nos 1 & 2 Hatches.*

Particulars of fiddle, funnel and ventilator coamings:—

*Stokehold gratings covered by strong steel hinged covers.  
 Fiddle, funnel and ventilator in efficient condition.  
 Engine room skylight of steel, strongly constructed.*

Particulars of Flush Bunker Scuttles:—

*NONE.*

Particulars of Companionways:—

*On 1<sup>st</sup> deck inside T.C., leading to F.P. Store, formed by steel trunk, steel door 4' 9" x 24", manipulated both sides, 15" sill.  
 On Bridge deck, leading to Office, formed by steel casing on bridge, 1" panelled wood door, 4' 9" x 24", manipulated both sides, 12" sill.*

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

*1 Vent. on upper St. 12" dia., Coaming 30" x 30", to Hold.  
 2 " " Bridge " 6" " " 30" x 30" " Bt.  
 2 " " " 6" x 14" " 8" to lip. " "  
 1 Mushroom " " 6" dia., 6" high. " "  
 1 Store funnel " " " " " "  
 1 Vent on R.Q. St. 12" dia., Coaming 36" x 30" to Hold*

*all Vents. constructed in accordance with the Rules.  
 Wood plug and canvas covers supplied for Coamings of the two Hold Vents, and canvas covers for remaining Vents.*

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

*1 Airpipe on T.C. St. 5" to lip x 3" dia. to F.P.  
 2 " " upper St. 8 1/2" " " x 2" " to D.B.  
 2 " " R.Q. St. 24" " " x 2" " " "  
 1 " " " 30" " " x 3" " " A.P.*

*No miffing holes.  
 wood plug & canvas covers. provided*

Particulars of Gangway Cargo and Coaling Ports:—

*NONE.*



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Obsidian

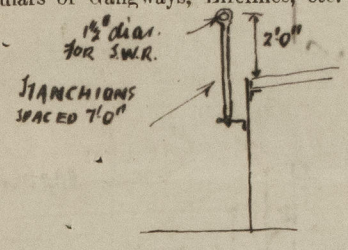
15 SEP 1934

Particulars of Scuppers and Sanitary Discharge Pipes:— *Scupper discharge above the deck.*

Particulars of Side Scuttles:— *Side scuttles in Tole and Bridge fitted with hinged deadlights.*  
*All scuttles of substantial construction.*

Particulars of Guard Rails:— *Guard rail on Tole, 36" high, 2 Rods, stanchions spaced 4'6".*  
*Bulwark on sides and front of Bridge 33" high, guard rails on aft end.*  
*Steel bulwark on Tole and R.D. Decks, efficiently constructed and supported.*

Particulars of Gangways, Lifelines, etc.:— *Stanchions supplied and arrangements made for fitting same as shown in sketch, on Tole deck on Port side of Hatch.*



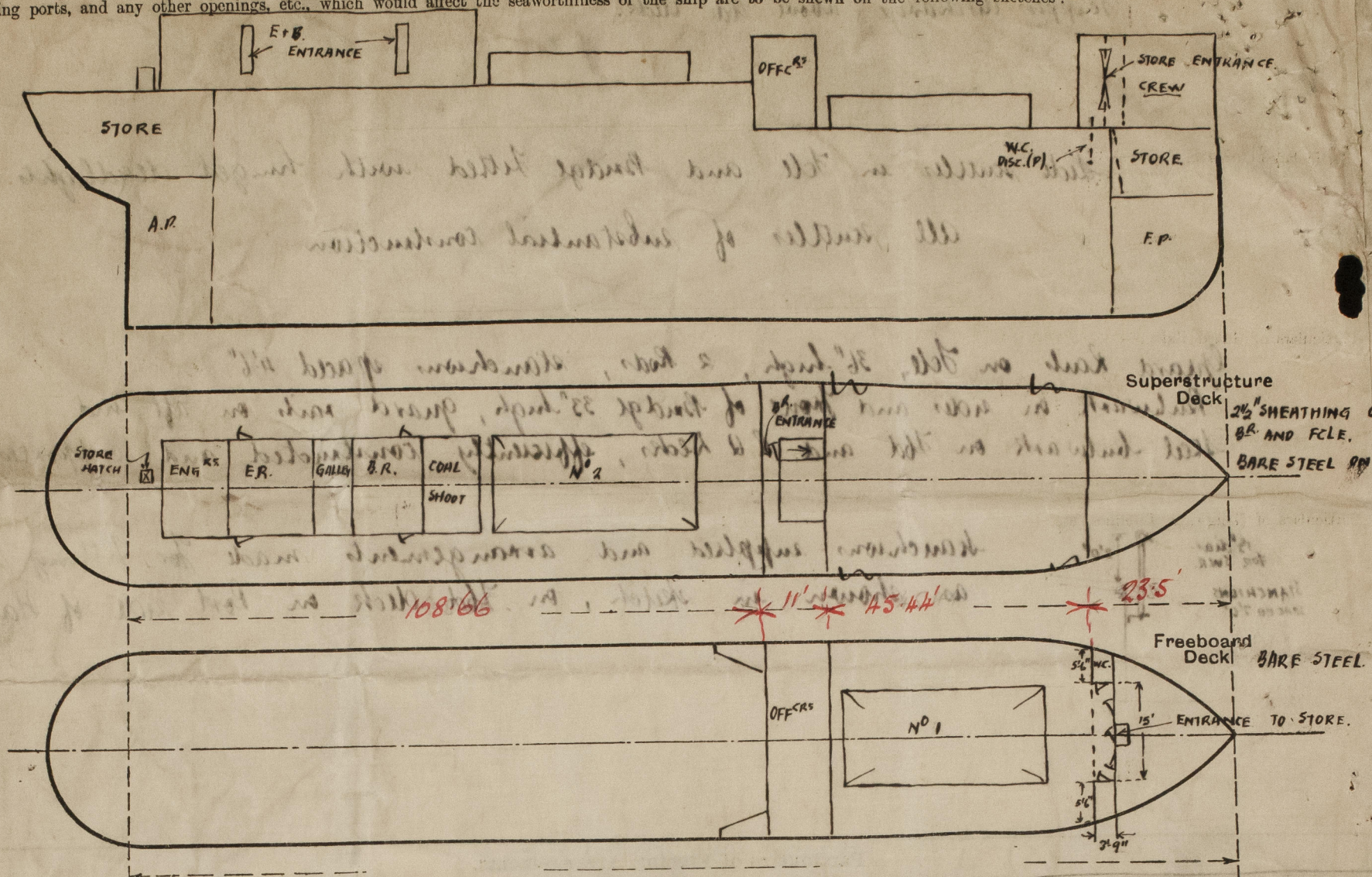
| Particulars of Freeing Arrangements.  |                        |                   |                       |                  |                                 |                     |
|---|------------------------|-------------------|-----------------------|------------------|---------------------------------|---------------------|
|   | Length of Bulwark      | Height of Bulwark | Size of Freeing Ports | Number each side | Area each side                  | Rule area each side |
| After Well ...  | 108.66                 | 36"               | 30" x 18"             | <del>3</del> 6   | <del>11.25</del> 22 1/2 sq. ft. | 21.73               |
| Forward Well ...  | <del>45.84</del> 45.44 | 42"               | 30" x 18"             | 3                | 11.25                           | 11.04               |
| State position of each freeing port (F. and A. position and height above deck edge) } After Well:— AFT SIDE 3'6" TO FORD SIDE PORT:— 6'0", 3'4" 3/4", 6'2", 7'5" 1/2" } 7" ABOVE D.K. }<br>State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such:— } Forward Well:— FORD " " " AFT " " " 3'6", 16'6", 32'6" — 10" " " }<br>Additional area where sheer is less than standard. } 2 bars to each port. |                        |                   |                       |                  |                                 |                     |

| 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 ...  |         |         |                     |         |                               | ✓                |                 |                   |
| Bridge, After Bulkhead ...  |         |         |                     |         |                               | ✓                |                 |                   |
| Bridge, Forward Bulkhead ...  | .30     | .26     | 5x3x.28 L           | 30"     |                               | ✓                |                 |                   |
| Forecastle Bulkhead ...   | .26     | .26     | 2 1/2 x 2 1/2 x .30 | 30"     | ✓                             | 4'9" x 24"       | 15"             | 7'0"              |
| Trunk, Aft ...  | ✓       |         |                     |         |                               |                  |                 |                   |
| Trunk, Forward ...  | ✓       |         |                     |         |                               |                  |                 |                   |
| Exposed Machinery Casings on Fore-<br>board or Raised Quarter Decks ...                         | .32     | .26     | 2 1/2 x 2 1/2 x .28 | 30"     | Plated top                    | 4'9" x 24"       | 15"             | 7'0"              |
| Exposed Machinery Casings on Super-<br>structure Decks ...                                      | ✓       |         |                     |         |                               |                  |                 |                   |
| Machinery Casings within Superstruc-<br>tures not fitted with Class I Closing<br>Appliances ... | ✓       |         |                     |         |                               |                  |                 |                   |
| Deckhouses on Flush Deck Ships ...  | ✓       |         |                     |         |                               |                  |                 |                   |

| Particulars of Closing Appliances (state if capable of being manipulated from both sides).      |   |
|---|---|
| Poop Bulkhead ...   | ✓   |
| Raised Quarter Deck Bulkhead ...  | ✓   |
| Bridge, After Bulkhead ...  | <del>9" port lights of substantial construction. No deadlights.</del> <i>No openings</i>                                |
| Bridge, Forward Bulkhead ...  | <del>do do do do do do</del> <i>No openings</i>   |
| Forecastle Bulkhead ...   | <i>Two 3/4" panelled doors to crew space, and two steel doors to side houses. Capable of being operated both sides.</i> |
| Exposed Machinery Casings on Fore-<br>board or Raised Quarter Decks ...                         | <i>Steel door, permanently attached, and capable of being closed and secured both sides.</i>                            |
| Exposed Machinery Casings on Super-<br>structure Decks ...                                      | ✓   |
| Machinery Casings within Superstruc-<br>tures not fitted with Class I Closing<br>Appliances ... | ✓   |
| Deckhouses on Flush Deck Ships ...  | ✓   |



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 shewn on the following sketches:—



$$\begin{aligned} \text{Fee} & 23.5 - \frac{3.75 + 15}{26.0} \\ & = 23.5 - 2.16 \\ & = 21.34 \end{aligned}$$

State any special features in the construction of the ship:— The survey was carried out afloat and was confined to the items detailed in this Report.

Tide: General Boasting Tide.

The following particulars were taken from the Displacement Scale on board the vessel.

| Draft. | Extreme Displacement | T. P. I. |
|--------|----------------------|----------|
| 13'    | 1546                 | 11.35    |
| 13'6"  | 1615                 | 11.45    |
| 14'    | 1685                 | 11.52    |

Please add the following to the list of items to be done:

- (ii) Door lock on store entrance fwd. to be repaired
- (iii) " " " E+B. doors to repair where necessary and to be made capable of being operated both sides where this is not the case.
- (iii) The bars on freeing ports to be renewed or repaired where necessary.

Builder's name and yard number London and Montreal S.B. Coy. N° 92.

Names of sister ships 1/2 Foam Lullen.

Owners Wm Robertson.

Fee £ 6 : 16 : 0

Received by me



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