

Lloyd's Register of Shipping.  
SURVEYS FOR FREEBOARD.

No 100092

Computation of Freeboard for Steamer, ~~Sailing Ship, Tanker~~having Raised Quarter deck, Bridge house & ForecastlePort of Survey BirkenheadDate of Survey March 1932Name of Surveyor Alfred SteapParticulars of Classification 100 A1

Ship's Name

(Type of Superstructures.)

Nationality and Port of Registry

Official Number

Gross Tonnage

Date of Build

Bristol  
Cardiff Aberdeen

145735

265

1923-11

Moulded Dimensions: Length L.W.L 126.75 Breadth 22.0' Depth 10.0'  
Moulded displacement at moulded draught = 85 per cent. of moulded depth 476 tons  
Coefficient of fineness for use with Tables .703

## Depth for Freeboard (D)

Moulded depth ... .. 10'-0"Stringer plate ... .. .44Sheathing on exposed deck  
 $T \left( \frac{L-S}{L} \right) =$  .04Depth for Freeboard (D) = 10.04

## Depth correction

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

$$(10.04 - 8.45) \cdot 975 = +1.55"$$

(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) 22'-0"

Standard Round of Beam =  $\frac{B \times 12}{50} = 5.28$

Ship's Round of Beam =  $5.28$

Difference .22Restricted to .4054

Correction =  $\frac{\text{Diff}^{\circ}}{4} \times \left(1 - \frac{S_1}{L}\right) = \frac{.22}{4} \times (1 - .5946) = .02$

## DEDUCTION FOR SUPERSTRUCTURES.

|                                     | Mean Covered Length (S) | Equivalent Enclosed Length (S <sub>1</sub> ) | Height       | Height Correction | Effective Length (E) |
|-------------------------------------|-------------------------|--|--------------|-------------------|----------------------|
| Peep enclosed ... ..                |                         |  |              |                   |                      |
| " overhang ... ..                   |                         |  |              |                   |                      |
| R.Q.D. enclosed ... ..              | <u>45'-6"</u>           | <u>45.50</u>                                 | <u>3'-6"</u> | ✓                 | <u>45.50</u>         |
| " overhang ... ..                   |                         |  |              |                   |                      |
| Bridge enclosed <u>HOUSE</u> ... .. | <u>10'-6"</u>           | <u>10.50</u>                                 | <u>6'-6"</u> | ✓                 | <u>10.50</u>         |
| " overhang aft ... ..               | <u>3'</u>               |  |              |                   |                      |
| " overhang forward ... ..           | <u>3'</u>               | <u>.12</u>                                   |              |                   | <u>.12</u>           |
| File enclosed <u>Equip</u> ... ..   | <u>21'-6"</u>           | <u>19.24</u>                                 | <u>6'-6"</u> | ✓                 | <u>19.24</u>         |
| " overhang ... ..                   | <u>3'</u>               |  |              |                   |                      |
| Trunk aft ... ..                    |                         |  |              |                   |                      |
| " forward ... ..                    |                         |  |              |                   |                      |
| Tonnage opening aft ... ..          |                         |  |              |                   |                      |
| " forward ... ..                    |                         |  |              |                   |                      |
| Total ... ..                        | <u>75.49</u>            | <u>75.36</u>                                 |              |                   | <u>75.36</u>         |

Standard Height of Superstructure 6.0" " R.Q.D. 3.1775Deduction for complete superstructure 18.675Percentage covered  $\frac{S}{L} = 59.56\%$ "  $\frac{S_1}{L} = 59.46\%$ "  $\frac{E}{L} = 59.46\%$ Percentage from Table, Line A. 45.24%

(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 =  $18.675 \times .4524 = -8.4$ 

## SHEER CORRECTION.

| Station                          | Standard Ordinate | S | M | Product       | Actual Ordinate | Effective Ordinate | S | M | Product       |
|----------------------------------|-------------------|---|---|---------------|-----------------|--------------------|---|---|---------------|
| A.P. ... ..                      | <u>22.68</u>      | 1 |   | <u>22.68</u>  | <u>21.25</u>    | <u>21.00</u>       | 1 |   | <u>22.68</u>  |
| $\frac{1}{2}$ L from A.P. ... .. | <u>10.09</u>      | 4 |   | <u>40.36</u>  | <u>9.00</u>     | <u>9.48</u>        | 4 |   | <u>40.36</u>  |
| $\frac{2}{3}$ L " ... ..         | <u>2.49</u>       | 2 |   | <u>4.98</u>   | <u>2.50</u>     | <u>2.37</u>        | 2 |   | <u>4.98</u>   |
| Amidships ... ..                 | ✓                 | 4 |   | ✓             | ✓               | ✓                  | 4 |   | ✓             |
| $\frac{2}{3}$ L from F.P. ... .. | <u>4.99</u>       | 2 |   | <u>9.98</u>   | <u>5.00</u>     | <u>3.75</u>        | 2 |   | <u>7.50</u>   |
| $\frac{1}{2}$ L " ... ..         | <u>20.18</u>      | 4 |   | <u>80.72</u>  | <u>14.00</u>    | <u>15.01</u>       | 4 |   | <u>60.04</u>  |
| F.P. ... ..                      | <u>45.35</u>      | 1 |   | <u>45.35</u>  | <u>36.50</u>    | <u>36.00</u>       | 1 |   | <u>36.00</u>  |
| Total ... ..                     |                   |   |   | <u>204.07</u> |                 |                    |   |   | <u>171.56</u> |

Correction =  $\frac{\text{Difference between sums of products}}{18} \left( .75 - \frac{S}{2L} \right) = \frac{32.51}{18} \times (.75 - .2978) = +.82"$

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 = 10.04Summer freeboard = .56Moulded draught (d) = 9.48

Deduction for Tropical freeboard and addition for

Winter freeboard =  $\frac{d}{4}$  inches = 2.37Addition for Winter North Atlantic Freeboard (if required) = 2

Deduction for Fresh Water.

Displacement in salt water at summer load water line

 $\Delta = 540$ 

Tons per inch immersion at summer load water line

 $T = 5.33$ Deduction =  $\frac{\Delta}{40T}$  inches= 2.53= 2.5

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient  $.703 + .68 = 1.383$ 

1.36

Depth Correction ... .. 1.55Deduction for superstructures ... .. 8.45Sheer correction ... .. .82Round of Beam correction ... .. .02

Correction for Thickness of Deck amidships

Other corrections, scantlings, etc. ... ..

Summer Freeboard = 6.79SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, Wood, Steel, Deck:-

|  |               |
|--|---------------|
| Tropical Fresh Water Line above Centre of Disc | <u>4 3/4"</u> |
| Fresh Water Line                               | <u>2 1/2"</u> |
| Tropical Line                                  | <u>2 1/4"</u> |
| Winter Line below                              | <u>2 1/4"</u> |
| Winter North Atlantic Line                     | <u>4 1/4"</u> |

|                                |                    |
|--------------------------------|--------------------|
| Tropical Fresh Water Freeboard | <u>0' - 6 3/4"</u> |
| Fresh Water                    | <u>0' - 2"</u>     |
| Tropical                       | <u>0' - 4 1/2"</u> |
| Winter                         | <u>0' - 9"</u>     |
| Winter North Atlantic          | <u>0' - 1 1/4"</u> |

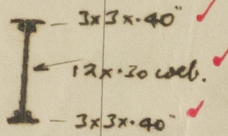
20 APR 1932

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MARKING FORM  
24 APR 1933MARKING FORM  
24 OCT 1933



## PARTICULARS OF PROTECTION TO OPENINGS, ETC.

| HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS                                 |   |                            |  |                             |  |  |  |  |  |
|---|---|----------------------------|--|-----------------------------|--|--|--|--|--|
| Description of Hatchway   |   |                            | MAIN HATCH   | BUNKER HATCH P.S. ON R.Q.D. | MANHOLE HATCH TO AFT PEAK TANK ON R.Q.D. INSIDE CASING | HATCH ON UPPER DECK INSIDE PELE TO FORE PEAK |  |  |  |
| Dimensions of Hatchway  |   |                            | 40'-2" x 13'-0"  | 5'-0" x 1'-9"               | 21" x 17 1/2" ELLIPTICAL                               | 2'-0" x 2'-0"                                |  |  |  |
| COAMINGS  | { | Height above Deck          | 42' ✓  | 13 1/2'                     |  | 6" ANGLE COAMING. ✓                          |  |  |  |
|   |   | Thickness { Sides          | 40' ✓  | 35' ✓                       |  |  |  |  |  |
|   |   | { Ends                     | 40' ✓  | 35' ✓                       | ✓  |  |  |  |  |
|   |   | Stiffeners                 | 7 x 3 x 38L ✓  | —                           |  |  |  |  |  |
|   |   | Brackets, <del>Stops</del> | 4 ✓  | —                           |  |  |  |  |  |
| HATCH BEAMS   | { | Number                     | 7 ✓  |                             |  |  |  |  |  |
|   |   | Spacing                    | 60" ✓  |                             |  |  |  |  |  |
|   |   | Scantling and Sketch       |  3x3x40" ✓<br>12x20 web. ✓<br>3x3x40" ✓ | ✓                           | ✓  | ✓  |  |  |  |
|   |   | Bearing Surface            | 3" ✓   |                             |  |  |  |  |  |
| FORE AND AFTERS   | { | Number                     |  |                             |  |  |  |  |  |
|   |   | Spacing                    |  |                             |  |  |  |  |  |
|   |   | Unsupported Lengths        |  |                             |  |  |  |  |  |
|   |   | Scantling* and Sketch      | ✓  | ✓                           | ✓  | ✓  |  |  |  |
|   |   | Bearing Surface            |  |                             |  |  |  |  |  |
| HATCH COVERS  | { | Material                   | PINE ✓   | PINE ✓                      | W.T. BOLTED PLATE ✓                                    | PINE PLUG ✓                                  |  |  |  |
|   |   | Thickness                  | 2 1/2" ✓   | 2 1/2" ✓                    | ✓  | 2 1/2" ✓                                     |  |  |  |
|   |   | How fitted                 | F.Y.A. ✓   | Attn. ✓                     | BOLTS SPACED 2 1/2" ✓                                  | ✓  |  |  |  |
|   |   | Bearing Surface            | 3" ✓   | 2 1/2" ✓                    |  | 2 1/2" ✓                                     |  |  |  |
| Spacing of Cleats   |   |                            | 21" ✓  | 24 ✓                        | ✓  | ✓  |  |  |  |
| Number of Tarpaulins  |   |                            | 4 ✓  | 2. ✓                        | ✓  | ✓  |  |  |  |
| *Are wood fore and afters steel shod at all bearing surfaces? None              |   |                            |  |                             |  |  |  |  |  |
| Are battens and wedges efficient and in good condition? ys ✓                    |   |                            |  |                             |  |  |  |  |  |
| Are tarpaulins in good condition and in accordance with rule requirements? ys ✓ |   |                            |  |                             |  |  |  |  |  |
| Are lashings provided in accordance with rule requirements? ys. ✓               |   |                            |  |                             |  |  |  |  |  |

Particulars of fiddley, funnel and ventilator coamings:—

Stokehold & fidley gratings covered by strong steel hinged covers. ✓  
 Fidley & funnel vents are in efficient condition. ✓  
 Engine room skylight is of steel strongly constructed. ✓

ulars of Flush Bunker Scuttles:—

Two Scuttles on Raised Quarter Deck. (11.15.) of cast steel fitted with bayonet joints

ars of Companionways :—

None. ✓

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

|         |                |                 |             |                               |   |
|---------|----------------|-----------------|-------------|-------------------------------|---|
| 2 VENTS | 6" DIA COAMING | 28" x .30"      | ON FOLE DK. | TO CREW ACCOMM. ON UPPER D.K. | ✓ |
| 2 VENTS | ON UPPER DK.   | 12" DIA COAMING | 36" x .34"  | TO HOLD.                      | ✓ |
| 2 VENTS | " BRIDGE       | 6" "            | 6" x .30    | " ACCOMM. ON UPPER DK.        | ✓ |
| 1       | " "            | 6" "            | 9" x .30    | " " " " " "                   | ✓ |

WOOD PLUGS & CANVAS COVERS ARE ON BOARD FOR ALL VENTS. ✓

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

| PIPE ON FOLE DK 3" DIA C.I. 25" HIGH LED TO DOUBLE BOTTOM TANK |   |   |               |   |     |   |   |   |                     |
|--|---|---|---------------|---|-----|---|---|---|---------------------|
| "  | " | " | 3"            | " | 12" | " | " | " | FORE PEAK TANK.     |
| "  | " | " | UPPER DK. 3½" | " | 27" | " | " | " | DOUBLE BOTTOM TANK. |
| "  | " | " | R.O.D.E. 3"   | " | 14" | " | " | " | AFT PEAK TANK. ✓    |

*Cavus canis furridus*  
as mean of doing.

Smoothing holes fitted.

Particulars of Gangway Cargo and Coaling Ports:—

None. ✓



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Particulars of Scuppers and Sanitary Discharge Pipes —

All sanitary discharge pipes are fitted with storm valves. ✓

Particulars of Side Scuttles:

Side Scuttles to crew spaces in Ice are provided with portable deadlights and are of substantial construction. ✓

Particulars of Guard Rails:—

Rails on forecastle deck 3'-0" high (2 rails) stanchions spaced 4'-6" apart. ✓

Particulars of Gangways, Lifelines, etc.:—

~~None.~~ Efficient lifelines provided for the protection of the crew, stanchions fitted to hatch stiffeners & wire rope.

| Particulars of Freeing Arrangements.   |                     |                   |                       |                  |                |                     |
|--|---------------------|-------------------|-----------------------|------------------|----------------|---------------------|
|  | Length of Bulwark   | Height of Bulwark | Size of Freeing Ports | Number each side | Area each side | Rule area each side |
| RAISED QUARTER DECK  | 45'-6" (✓) (6 A.P.) | 3'-6"             | 3'-0" x 1'-6"         | 3                | 13.5 (✓)       | 11.0                |
| Forward Well   | 49'-3" (✓)          | 3'-6"             | 3'-0" x 1'-6"         | 4                | 18.0 (✓)       | 11.5                |
| State position of each freeing port (F. and A. position and height above deck edge) { Forward Well: — 3'-1" 6'-9" 12'-9" 8'-6" 6'-2" } FOLE FRONT  |                     |                   |                       |                  |                |                     |
| State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such: — 3 PORTS (P+S) IN FORD WELL } FITTED WITH HINGED STEEL SHUTTERS. 3 " ON R.Q.D. } 1 P+S IN FORD WELL FITTED WITH 2 RODS. NO SHUTTER. |                     |                   |                       |                  |                |                     |
| ALL FREEING PORTS 10" ABOVE DECK EDGE.   |                     |                   |                       |                  |                |                     |
| 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  |         |         |              |         |                               |                   |                 |                   |
| Bridge, After Bulkhead  | 30" ✓   | 25" ✓   | 5x3x.30L ✓   | 30" ✓   | BRKTS TOP & BOTTOM ✓          | None ✓            | None ✓          | 6'-6" ✓           |
| Bridge, Forward Bulkhead  | 30" ✓   | 26" ✓   | 5x3x.30L ✓   | 30" ✓   | BRKTS TOP & BOTTOM ✓          | None ✓            | None ✓          | 6'-6" ✓           |
| Forecastle Bulkhead   | 35" ✓   | 30" ✓   | 2½x2½x.30L ✓ | 27" ✓   | None ✓                        | 2 @ 4'-6"x1'-9" ✓ | 17" ✓           | 6'-6" ✓           |
| Trunk, Aft  |         |         |              |         |                               |                   |                 |                   |
| Trunk, Forward  |         |         |              |         |                               |                   |                 |                   |
| Exposed Machinery Casings on Free-board or Raised Quarter Decks                     | 30" ✓   | 26" ✓   | 4x3x.30L ✓   | 30" ✓   | BRKTS TOP ✓ NONE AT BOTTOM    | 4 @ 4'-6"x1'-9" ✓ | 18" ✓           | 6'-6" ✓           |
| Exposed Machinery Casings on Superstructure Decks                                   |         |         |              |         |                               |                   |                 |                   |
| Machinery Casings within Superstructures not fitted with Class I Closing Appliances |         |         |              |         |                               |                   |                 |                   |
| Deckhouses on Flush Deck Ships  |         |         |              |         |                               |                   |                 |                   |

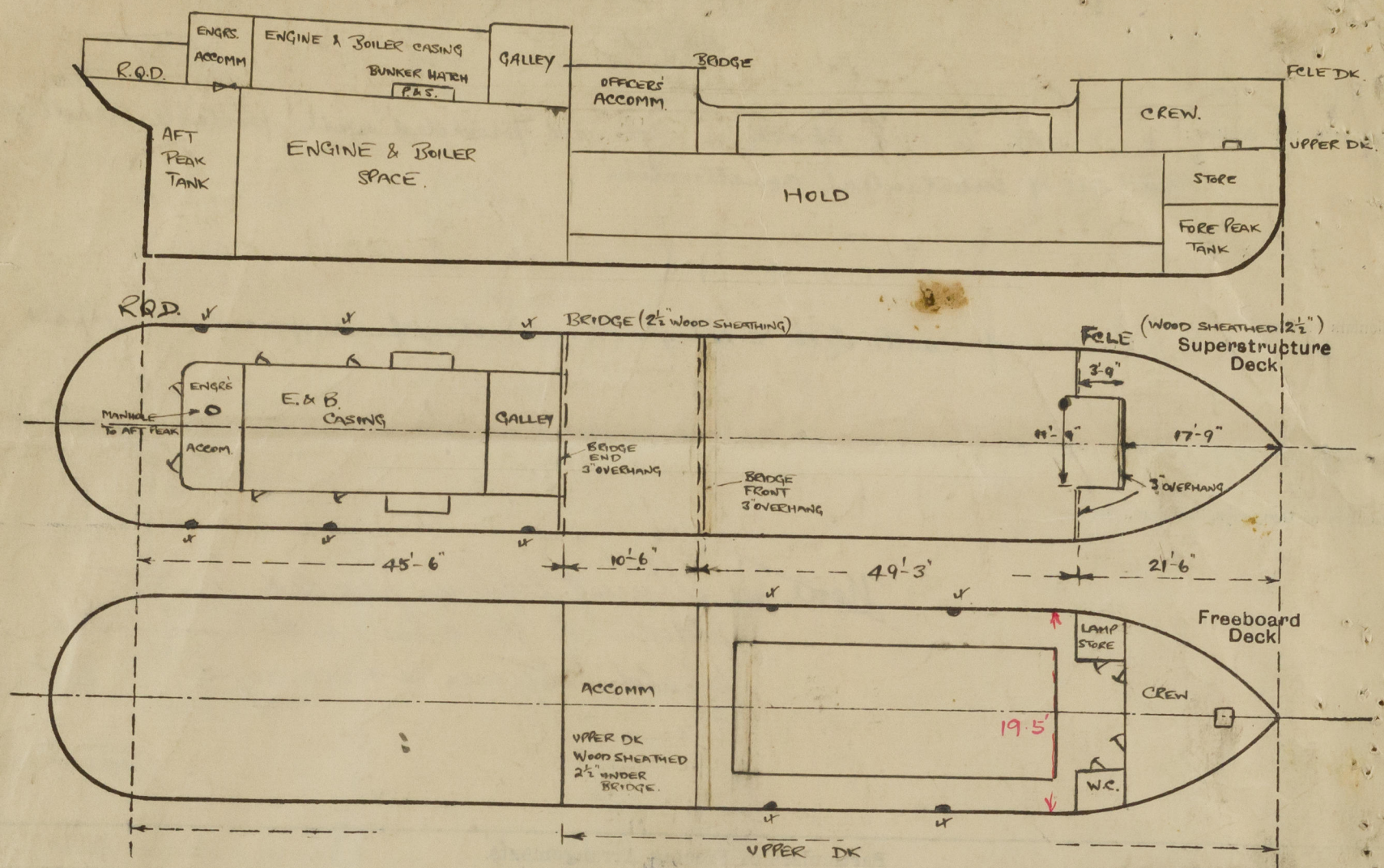
Particulars of Closing Appliances (state if capable of being manipulated from both sides).

|   |  |
|---|--|
| Poop Bulkhead   |  |
| Raised Quarter Deck Bulkhead  |  |
| Bridge, After Bulkhead  | ✓  |
| Bridge, Forward Bulkhead  | ✓  |
| Forecastle Bulkhead   | 2 strong steel hinged doors — Capable of being operated from both sides. ✓ |
| Exposed Machinery Casings on Free-board or Raised Quarter Decks                     | 4 strong steel hinged doors — Capable of being operated from both side. ✓  |
| Exposed Machinery Casings on Superstructure Decks                                   |  |
| Machinery Casings within Superstructures not fitted with Class I Closing Appliances |  |
| Deckhouses on Flush Deck Ships  |  |



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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:



✓ Strong Scuppers 6" x 3" ✓

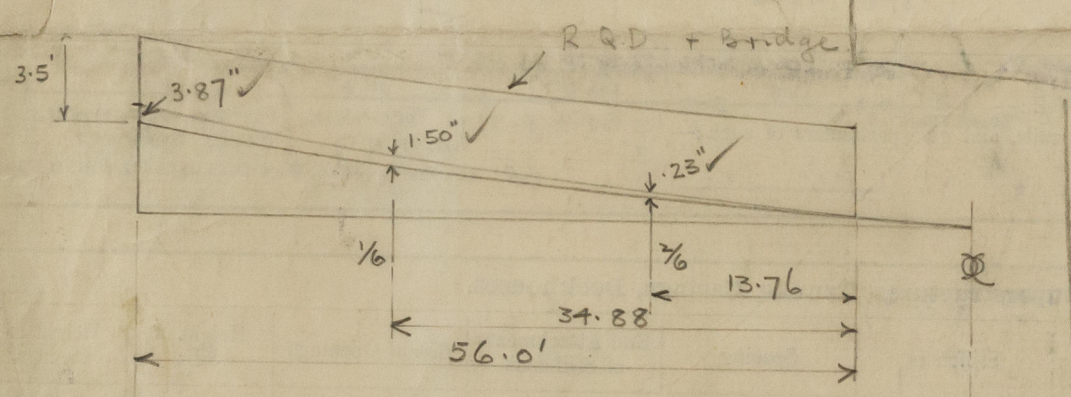
$$F'CLE \text{ Equiv } B^{HD}$$

$$F'CLE = 21.5' \quad L/10 = 12.67'$$

$$DEDUCT. \frac{11.75 \times 3.75}{19.5} = \frac{2.26}{19.24} = \text{Equiv. } B^{HD}$$

$$21.5 - 2.26 = 19.24$$

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



$$m-d \text{ depth} = 10'-0"$$

$$85\% = 8'-6"$$

$$Keel = 9'-0"$$

$$\Delta \text{ from scale} = 478 \text{ Tons} \times .99 = 476 \text{ tons}$$

$$F.W. \text{ mld} = 9'-48"$$

$$= 9'-5\frac{3}{4}"$$

$$Keel = 9'-11\frac{3}{4}"$$

$$\Delta \text{ from scale} = 540 \text{ tons}$$

$$\Delta \text{ at } 10'-0" = 542$$

$$\Delta \text{ at } 9'-0" = 478$$

$$T.P.I. = 5.33$$

Builder's name and yard number The Hansen S.B. & S. Repg. Co. Ltd. Bridford N°7

Names of sister ships "Wheatblade"

Owners Spillers Ltd. J R Watt & Sons Ltd

Reg £ 3 : 8 : 0

Received by me

*[Signature]*



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