

# LLOYD'S REGISTER OF SHIPPING

UNITED WITH THE BRITISH CORPORATION REGISTER

## SURVEYS FOR FREEBOARD

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER)

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|  |                 |   |                              |                               |   |
|--|-----------------|---|------------------------------|-------------------------------|---|
| Ship's Name<br><b>"B.P. EXPLORER"</b>  | Official Number | Nationality and Port of Registry<br><b>BRITISH.<br/>LONDON.</b> | Gross Tonnage<br><b>302.</b> | Date of Build<br><b>1956.</b> | Port of Survey <b>NORTHWICH, CHESHIRE.</b>  |
| Moulded Dimensions: Length <b>31'-10"</b> Breadth <b>21'-6"</b> Depth <b>11'-11 1/2"</b>   |                 |   |                              |                               | Date of Survey <b>DURING CONSTRUCTION.</b>  |
| Freeboard Length <b>ON 10'-6" W.L. F.P. TO CENTRE LINE OF VOITH-SCHNEIDER PROPELLER 131'-10"</b><br><b>133.28' = 96% OF L.W.L.</b> |                 |   |                              |                               | Surveyor's Signature <i>J. Abley</i>  |
| Moulded displacement at moulded draught = 85 per cent. of moulded depth <b>(12.10.16)</b> <b>660</b> tons                          |                 |   |                              |                               | Particulars of Classification <b>+100A1 CARRYING PETROLEUM IN BULK, FOR SERVICE IN THE RIVER SEVERN, LIMITING PORT SEAWARDS, SWANSEA.</b> |
| Coefficient of fineness for use with Tables <b>.793</b>  |                 |   |                              |                               |   |

| DEPTH FOR FREEBOARD (D).                         | DEPTH CORRECTION.  | ROUND OF BEAM CORRECTION.  |
|--|--|--|
| Moulded depth ... .. <b>11.96'</b>               | (a) Where D is greater than Table depth (D-Table depth) R = <b>(11.99 - 8.89) 1.025 = 3.18</b> | Moulded Breadth (B) <b>21.50</b>   |
| Stringer plate ... .. <b>(.32")</b> <b>.027'</b> | (b) Where D is less than Table depth (if allowed) (Table depth-D) R = <b>3.10</b>              | Standard Round of Beam = $\frac{B \times 12}{50} = \mathbf{5.16}$  |
| Wood Sheathing on exposed deck                   | If restricted by superstructures <b>✓</b>  | Ship's Round of Beam = <b>5 1/2"</b>   |
| $T \left( \frac{L-S}{L} \right) =$               |  | Difference <b>.34</b>  |
| Depth for Freeboard (D) = <b>11.99</b>           |  | Restricted to  |
|  |  | Correction = $\frac{\text{Diff}^2}{4} \times \left( 1 - \frac{S_1}{L} \right) = \frac{.34^2}{4} \times .8424 = \mathbf{.07}$ |

## 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 ... ..     |                         |  |                        |                   |                      |
| " overhang ... ..          |                         |  |                        |                   |                      |
| Bridge enclosed ... ..     | <b>21.00</b>            | <b>21.00</b>                                 | <b>6'-6"</b>           |                   | <b>21.00</b>         |
| " overhang aft ... ..      |                         |  |                        |                   |                      |
| " overhang forward ... ..  |                         |  |                        |                   |                      |
| F'cle enclosed ... ..      |                         |  |                        |                   |                      |
| " overhang ... ..          |                         |  |                        |                   |                      |
| Trunk aft ... ..           |                         |  | <b>3'-0 1/2" ATCR.</b> |                   |                      |
| " forward ... ..           |                         |  | <b>11 1/2" ATCR.</b>   |                   |                      |
| Tonnage opening aft ... .. |                         |  |                        |                   |                      |
| " " forward ... ..         |                         |  |                        |                   |                      |
| Total ... ..               | <b>21.00</b>            | <b>21.00</b>                                 |                        |                   | <b>21.00</b>         |

Standard Height of Superstructure **6.00**" " R.Q.D. **19.33**Deduction for complete superstructure **19.33**Percentage covered  $\frac{S}{L} =$ " "  $\frac{S_1}{L} =$  **13.76**" "  $\frac{E}{L} =$ Percentage from Table, Line A. **7.88**(corrected for absence of forecastle (if required)) **7.88 - 5.00 = 2.88**

Percentage from Table, Line B.

(corrected for absence of forecastle (if required))

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

Deduction = **.0288 x 19.33 = .56**

## SHEER CORRECTION.

| Station                | Standard Ordinate | S M      | Product       | Actual Ordinate | Effective Ordinate | S M      | Product       |
|------------------------|-------------------|----------|---------------|-----------------|--------------------|----------|---------------|
| A.P. ... ..            | <b>23.33</b>      | <b>1</b> | <b>23.33</b>  | <b>7 1/4"</b>   | <b>7.25</b>        | <b>1</b> | <b>7.25</b>   |
| 1/8 L from A.P. ... .. | <b>10.38</b>      | <b>4</b> | <b>41.52</b>  | <b>1/2"</b>     | <b>.50</b>         | <b>4</b> | <b>2.00</b>   |
| 1/4 L " ... ..         | <b>2.57</b>       | <b>2</b> | <b>5.14</b>   |                 | <b>0</b>           | <b>2</b> | <b>0</b>      |
| Amidships ... ..       | <b>0</b>          | <b>4</b> | <b>0</b>      | <b>0</b>        | <b>0</b>           | <b>4</b> | <b>0</b>      |
| 3/8 L from F.P. ... .. | <b>5.13</b>       | <b>2</b> | <b>10.26</b>  | <b>5"</b>       | <b>5.00</b>        | <b>2</b> | <b>10.00</b>  |
| 1/2 L " ... ..         | <b>20.76</b>      | <b>4</b> | <b>83.04</b>  | <b>1'-9"</b>    | <b>21.00</b>       | <b>4</b> | <b>84.00</b>  |
| F.P. ... ..            | <b>46.66</b>      | <b>1</b> | <b>46.66</b>  | <b>3'-11"</b>   | <b>47.00</b>       | <b>1</b> | <b>47.00</b>  |
| Total ... ..           |                   |          | <b>209.95</b> |                 |                    |          | <b>150.25</b> |

Correction =  $\frac{\text{Difference between sums of products}}{18} \left( .75 - \frac{S}{2L} \right) = \frac{59.70}{18} \left( .75 - \frac{0.75}{100} \right) = \mathbf{2.23}$

If limited on account of midship superstructure.

Mean actual sheer aft = **Def**Mean actual sheer forward = **Def**Length of enclosed superstructure forward of amidships = **12.8**

" " aft of " =

## Deduction for Tropical Freeboard.

## Addition for Winter and Winter North Atlantic Freeboard.

Depth to Freeboard Deck = **11.99** Ft.

Summer freeboard = **1.60**

Moulded draught (d) = **10.39**

Keel allowance =

Extreme draught =

Deduction for Tropical freeboard and addition for =

Winter freeboard =  $\frac{d}{4}$  inches = **2.59 1/2**

Addition for Winter North Atlantic Freeboard (if required) =

## Deduction for Fresh Water.

Displacement in salt water at summer load water line **(10'-6")**

$\Delta = \mathbf{684 \text{ TONS. } 676}$

Tons per inch immersion at summer load water line

$T = \mathbf{6.29. } 6.28$

Deduction =  $\frac{\Delta}{40 T}$  inches = **2 3/4**

$\Delta @ 9'-6" \text{ DRAFT} = \mathbf{607.5 \text{ TONS.}}$

$T.P.I. @ 9'-6" = \mathbf{6.20.}$

$\Delta @ 11'-6" = \mathbf{760 \text{ TONS.}}$

$T.P.I. @ 11'-6" = \mathbf{6.36.}$

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

Correction for coefficient  $\frac{.793 + .68}{1.36} = \mathbf{1.473}$ 

Depth Correction ... .. **3.18**

Deduction for superstructures ... .. **0.56**

Sheer correction ... .. **2.23**

Round of Beam correction ... .. **0.07**

Correction for Thickness of Deck amidships ...

Other corrections, scantlings, etc. ...

Summer Freeboard = **19.28**

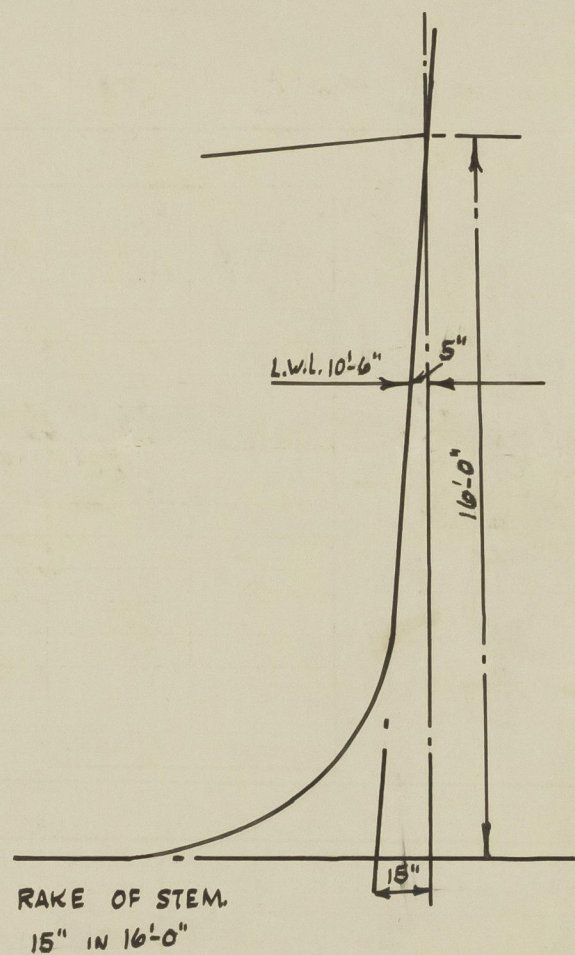
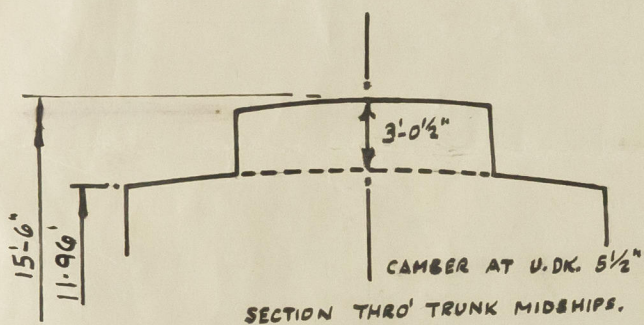
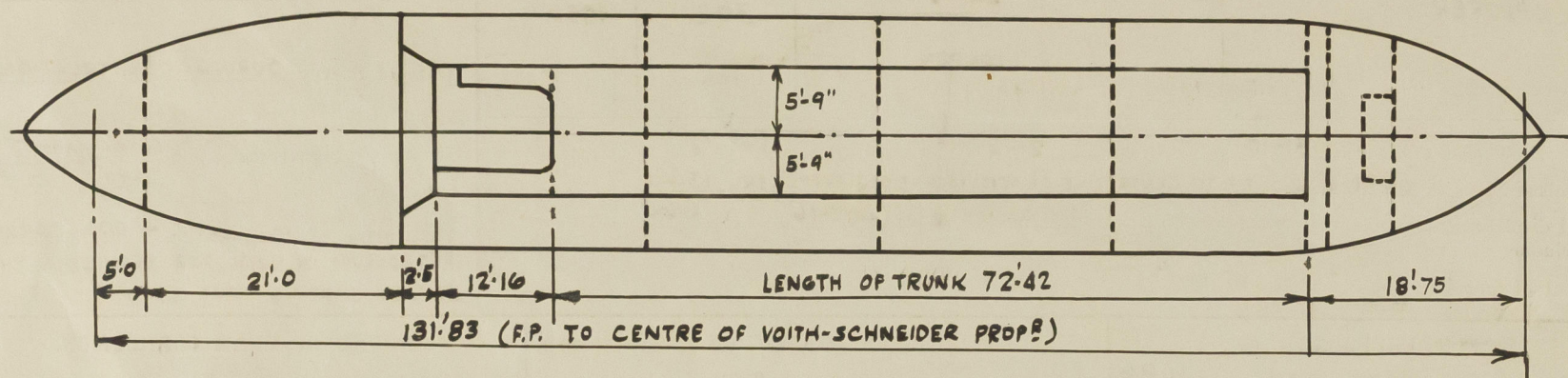
## SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, Wood, Steel, Deck :-

|  |                     |                                |                     |
|--|---------------------|--------------------------------|---------------------|
| Tropical Fresh Water Line above Centre of Disc | <b>Not Assigned</b> | Tropical Fresh Water Freeboard | <b>Not Assigned</b> |
| Fresh Water Line " "                           | <b>2 3/4</b>        | Fresh Water " "                | <b>1 - 4 1/2</b>    |
| Tropical Line " "                              | <b>Not Assigned</b> | Tropical " "                   | <b>Not Assigned</b> |
| Winter Line below " "                          | <b>2 1/2</b>        | Winter " "                     | <b>1 - 9 3/4</b>    |
| Winter North Atlantic Line " "                 | <b>Not Assigned</b> | Winter North Atlantic " "      | <b>Not Assigned</b> |



# B.P. Explorer.

A new form should be prepared if any alterations that affect the freeboard have been made. If no such alterations have been made, the Surveyor should endorse the form on this side with his signature and the date.



Trade of ship

ESTUARIAL SERVICE IN THE RIVER SEVERN.

Names of sister ships

"B.P. MANUFACTURER" & "B.P. STEELMAKER."

Builder's name and yard number

W.J. YARWOOD & SONS LTD. NO 900.

Owners

SHELL MEX & B.P. LTD.

Fee £

15 : 0 : 0

List of plans forwarded for reference. (See "Instructions to Surveyors, Part 4, 1950," paragraph 11.)

SHELL EXPANSION  
PROFILE & DECKS & MIDSHIP SECTION.  
BULKHEAD PLAN.



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