

LLOYD'S REGISTER OF SHIPPING

SURVEYS FOR FREEBOARD

(COMPUTATION FOR ~~STEAMER~~, ~~SAILING SHIP~~, TANKER)

Received
 Index No.
 Govt. Copy
 Owners C11

Ship's Name **"ESSO WANDSWORTH"** Official Number **187594** Nationality and Port of Registry **BRITISH LONDON** Gross Tonnage **4352** Date of Build **1943**

Port of Survey **SOUTH SHIELDS.**

Date of Survey **DURING CLASSIFICATION.**

Moulded Dimensions: Length **355.0'** Breadth **60.0'** Depth **17.5'**

Freeboard Length **355.0' TO CENTRE OF RUDDER STOCK.**

Moulded displacement at moulded draught = 85 per cent. of moulded depth (excluding bossing) **4681** tons

Coefficient of fineness for use with Tables **.848**

Surveyor **W.B. DUGDALE.**

Particulars of Classification **100A1**
CARRYING PETROLEUM IN BULK
(CLASS CONTEMPLATED)

DEPTH FOR FREEBOARD (D).

Moulded depth ... **17.5**

Stringer plate ... **.50** ... **.04**

Wood Sheathing on exposed deck

$T \frac{(L-S)}{L} = \text{NONE}$

Depth for Freeboard (D) = **17.54**

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 =

(23.67-17.54) 2.431 = -16.44"

6.13

If restricted by superstructures

ROUND OF BEAM CORRECTION.

Moulded Breadth (B) = **60.0'**

Standard Round of Beam = $\frac{B \times 12}{50} = \mathbf{14.4"}$

Ship's Round of Beam = **15.56**

Difference = **1.16**

Restricted to

Correction = $\frac{\text{Diff}}{4} \times \left(1 - \frac{S_1}{L}\right) = \frac{1.16}{4} \left(1 - \frac{31.43}{68.54}\right) = \mathbf{.09"}$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed	86.33	86.33	8.0'	—	86.33
" overhang					
R.O.D. enclosed					
" overhang					
Bridge enclosed					
" overhang aft					
" overhang forward					
Fore enclosed	38.08	38.08	8.0	—	38.08
" overhang	3.83	1.92			1.92
Trunk aft ... }		114.11	> 4.05	—	114.11
" forward }					
Tonnage opening aft					
" forward					
Total	128.24	243.44			243.44

Standard Height of Superstructure **4.05'**

" " R.Q.D. —

Deduction for complete superstructure **39.00"**

Percentage covered $\frac{S}{L} = 36.12$

" " $\frac{S_1}{L} = 68.54$

" " $\frac{E}{L} = 61.43$

Percentage from Table, Line **TANKER** = **61.43**

(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 = **39.00 x 61.43 = 23.96"** ✓

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P.	45.5	1		45.5	12"	23.4	1		23.4
1/2 L from A.P.	20.25	4		81.00	0	0.61	4		2.44
1/4 L	5.00	2		10.00	0	0	2		0
Amidships	0	4		0	0	0	4		0
1/4 L from F.P.	10.01	2		20.02	0	0	2		0
1/2 L	40.49	4		161.96	0	0	4		0
F.P.	91.00	1		91.00	14"	14	1		14
Total				409.48					39.84

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{369.64}{18} \left(.75 - \frac{56.94}{1806} \right) = \mathbf{+11.40}$

If limited on account of midship superstructure.

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

Deduction for Tropical Freeboard.

Addition for Winter and Winter North Atlantic Freeboard.

Depth to Freeboard Deck = **17.54**

Summer freeboard = **2.48**

Moulded draught (d) = **15.06**

Keel allowance =

Extreme draught =

Deduction for Tropical freeboard and addition for =

Winter freeboard = $\frac{d}{4}$ inches = **3.76 = 3 3/4"**

Addition for Winter North Atlantic Freeboard (if required) = **3.76 + 3.55 = 7.31 = 7 1/4"**

Deduction for Fresh Water.

Displacement in salt water at summer load water line

$\Delta = \mathbf{4864}$

Tons per inch immersion at summer load water line

$T = \mathbf{46.42}$

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

= **4.18"**

= **4 1/4"** ✓

TABULAR FREEBOARD corrected for Plank Deck (if required)

Correction for coefficient $\frac{.848 + .61}{1.36} = \frac{1.528}{1.36}$ ✓

	+	-
Depth Correction	✓	16.44
Deduction for superstructures	✓	23.96
Sheer correction	✓	11.40
Round of Beam correction	✓	.09
Correction for Thickness of Deck amidships	✓	—
Other corrections, scantlings, etc.	✓	—
	11.40	40.49
Summer Freeboard		29.48 ✓

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

Tropical Fresh Water Line above Centre of Disc	8"	Tropical Fresh Water Freeboard	2'-5 3/4"
Fresh Water Line	4 1/4"	Fresh Water	1'-9 3/4"
Tropical Line	3 3/4"	Tropical	2'-1 1/2"
Winter Line below	3 3/4"	Winter	2'-2"
Winter North Atlantic Line	4 1/4"	Winter North Atlantic	2'-9 1/2"
			3'-1"

Esso Wandsworth.

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.

Equivalent length of Poop.

$$\begin{aligned} \text{Length at side} &= 46.92 \\ \frac{(36.08 + 58) \times \frac{1}{2}}{60} &= \frac{9.41}{86.33} \end{aligned}$$

Equivalent length of Trunk.

$$\begin{aligned} &= (228.0 - 1.92) \times \frac{31.08}{60} \\ &= 114.11' \end{aligned}$$

Sheers Aft.

$$\begin{aligned} \frac{1}{6} &= 35\frac{5}{6} = 59.14' \\ \text{Excess height of poop} &= 8 - 7.05 = .95 \\ &= 11.4'' \\ \text{Allowed sheer at A.P.} &= 12 + 11.4 \\ &= 23.4 \\ &= 11.4 \times \frac{17.75^2}{76.92^2} \\ &= 0.61'' \end{aligned}$$

Equivalent beam

$$\begin{aligned} &= \frac{3}{4} \times 10 \times \frac{30}{14.46} \\ &= 15.56'' \end{aligned}$$

See earlier computation for sketches.

Hydrostatics (From Δ & deadweight table)

<u>Draught.</u>	<u>Δ s.w.</u>	<u>T. P. I.</u>
16'-0"	8350	44.0
15'-0"	7780	46.7
14'-0"	7200	46.4

Trade of ship

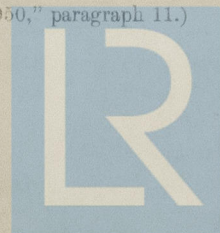
Names of sister ships

Builder's name and yard number

Owners

Fee £

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



© 2020

Lloyd's Register
Foundation