

LLOYD'S REGISTER OF SHIPPING SURVEYS FOR FREEBOARD

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

Received
 Index No.
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*Esso Wandsworth
 187594
 1943*

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.
Moulded Dimensions: Length 355.0' Breadth 60.0' Depth 17.5'					Date of Survey DURING CLASSIFICATION.
Freeboard Length 355.0' TO CENTRE OF RUDDER STOCK.					Surveyor W.B. DUGDALE.
Moulded displacement at moulded draught = 85 per cent. of moulded depth (excluding bossing) 4681 tons					Particulars of Classification 100A1 CARRYING PETROLEUM IN BULK (CLASS CONTEMPLATED)
Coefficient of fineness for use with Tables .848					

DEPTH FOR FREEBOARD (D).	DEPTH CORRECTION.	ROUND OF BEAM CORRECTION.
Moulded depth ... 17.5	(a) Where D is greater than Table depth (D-Table depth) R =	Moulded Breadth (B) = 60.0'
Stringer plate50" .04	(b) Where D is less than Table depth (if allowed) (Table depth-D) R =	Standard Round of Beam = $\frac{B \times 12}{50} = 14.4"$
Wood Sheathing on exposed deck	(23.67-17.54)2.431 = -16.44"	Ship's Round of Beam = 15.56
$T \left(\frac{L-S}{L} \right) = \text{NONE}$	If restricted by superstructures	Difference = 1.16
Depth for Freeboard (D) = 17.54		Restricted to
		Correction = $\frac{\text{Diff}^2}{4} \times \left(1 - \frac{S}{L}\right) = \frac{1.16^2}{4} (1 - .6857) = .09"$

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		117.11	> 7.05	-	117.11
" forward					
Tonnage opening aft					
" forward					
Total	128.24	243.44			243.44

Standard Height of Superstructure **7.05'**

" " R.Q.D. -

Deduction for complete superstructure **39.00"**

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

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

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

(corrected for absence of forecastle (if required))

(corrected for absence of forecastle (if required))

Interpolation for bridge less than 2L (if required)

Deduction = **39.00 x .6143 = 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
$\frac{1}{2}L$ from A.P.	20.25	4		81.00	0	0.61	4		2.44
$\frac{1}{4}L$	5.00	2		10.00	0	0	2		0
Amidships	0	4		0	0	0	4		0
$\frac{1}{4}L$ from F.P.	10.01	2		20.02	0	0	2		0
$\frac{1}{2}L$	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

Actual height of poop = **8.00**

Standard " = **4.05**

Mean actual sheer aft = **0.95**

Mean standard sheer aft = **11.4"**

Mean actual sheer forward = **0.00**

Mean standard sheer forward = **0.00**

Length of enclosed superstructure forward of amidships = **Yankee**

" " aft of " = **Deficient Sheers.**

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{369.64 - 356.94}{18} = +11.40$

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

Deduction for Tropical Freeboard.	Deduction for Fresh Water.	TABULAR FREEBOARD corrected for Plank Deck (if required)	52.4
Addition for Winter and Winter North Atlantic Freeboard.	Displacement in salt water at summer load water line $\Delta = 4854$	Correction for coefficient $\frac{.848 + .68}{1.36} = 1.528$	58.84
Depth to Freeboard Deck = 17.54	Tons per inch immersion at summer load water line $T = 46.42$	Depth Correction ... 16.44	
Summer freeboard = 2.48	Deduction = $\frac{\Delta}{40T} = 4.18"$	Deduction for superstructures ... 23.96	
Moulded draught (d) = 15.06		Sheer correction ... 11.40	
Keel allowance =		Round of Beam correction09	
Extreme draught =		Correction for Thickness of Deck amidships ...	
Deduction for Tropical freeboard and addition for =		Other corrections, scantlings, etc. ...	
Winter freeboard = $\frac{d}{4}$ inches = 3.76 = 3$\frac{3}{4}$"			
Addition for Winter North Atlantic Freeboard (if required) = 3.76 + 3.55 = 7.31 = 7$\frac{1}{4}$"			
			7.5.57
			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	1. - 9 $\frac{3}{4}$ "
Fresh Water Line	4 $\frac{1}{4}$ "	Fresh Water	2. - 1 $\frac{1}{2}$ "
Tropical Line	3 $\frac{3}{4}$ "	Tropical	2. - 2"
Winter Line below	3 $\frac{3}{4}$ "	Winter	2. - 9 $\frac{1}{2}$ "
Winter North Atlantic Line	4 $\frac{1}{4}$ "	Winter North Atlantic	3. - 1"

14.5.57



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.

$$\begin{aligned} \frac{1}{6} &= 3\frac{5}{6} = 59.17' \\ \text{Excess height of poop} &= 8 - 7.05 = .95 \\ &= 11.4" \\ \text{Allowed sheer at A.P.} &= 12 + 11.4 \\ &= 23.4 \\ &= 11.4 \times \frac{17.75^2}{76.92^2} \\ &= 0.61" \end{aligned}$$

Equivalent lumber

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

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 £ _____

