

# Lloyd's Register of Shipping.

## SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

BUILDER'S Name <b>MESSRS ROTTERDAM DRYDOCK.</b>	Official Number	Nationality and Port of Registry	Gross Tonnage	Date of Build	Port of Survey <b>London.</b>
YARD No 213.					Date of Survey <b>29-12-38.</b>
Moulded Dimensions: Length <b>430' 0</b> Breadth <b>62' 5'</b> Depth <b>24' 5'</b>					Surveyor's Signature
Moulded displacement at moulded draught = 85 per cent. of moulded depth <b>12.785</b> tons					Particulars of Classification <b>+ 100 A.I.</b>
Coefficient of fineness for use with Tables <b>.80.</b>					<b>CARRYING PETROLEUM IN BULK. (CONTEMPLATED)</b>

<b>Depth for Freeboard (D).</b> Moulded depth ... <b>24' 50</b> Stringer plate ... <b>.05</b> Sheathing on exposed deck $T \left( \frac{L-S}{L} \right) =$ <b>✓</b> Depth for Freeboard (D) = <b>24' 55</b>	<b>Depth correction.</b> (a) Where D is greater than Table depth (D - Table depth) R = <b>✓</b> (b) Where D is less than Table depth (if allowed) (Table depth - D) R = <b>(28.67 - 24.55) 3 = -12.36"</b> If restricted by superstructures $12.36 \times \frac{7.0}{7.5} = -11.53"$	<b>Round of Beam correction.</b> Moulded Breadth (B) = <b>62' 50'</b> Standard Round of Beam = $\frac{B \times 12}{50} =$ <b>15' 00"</b> Ship's Round of Beam = <b>14' 96"</b> Difference <b>Deficiency</b> = <b>.04"</b> Restricted to Correction = $\frac{\text{Diff}}{4} \times \left( 1 - \frac{S_1}{L} \right) =$ <b><math>\frac{.04}{4} (.24) = \text{negligible}</math></b>
----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

### DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S <sub>1</sub> )	Height	Height Correction	Effective Length (E)
Poop enclosed ...	91.01	91.01	7.50	✓	91.01
„ overhang ...					
R.Q.D. enclosed ...					
„ overhang ...					
Bridge enclosed ...					
„ overhang aft ...					
„ overhang forward ...					
Fore enclosed ...	60.00	60.00	10.50	✓	60.00
„ overhang ...					
Trunk aft <b>(A)</b> ...		8.55	7.25	7.25/7.50	8.26
„ forward <b>(B)(C)(D)</b> ...		167.25	7.00	7.00/7.50	156.06
Tonnage opening aft ...					
„ „ forward ...					
Total ...	151.01	326.81			315.33.

Standard Height of Superstructure **7' 50'**

„ „ R.Q.D. **✓**

Deduction for complete superstructure **42' 00"**

Percentage covered  $\frac{S}{L} =$  **35.12**

„  $\frac{S_1}{L} =$  **76.00**

„  $\frac{E}{L} =$  **73.33.**

Percentage from Table, Line **A TANKER** = **67.10**  
 (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 = **42' 00" x .6710 = 28' 18"**

### SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate SEE OVER	S	M	Product
A.P. ...	53.00	1		53.00	21.00	21.00	1		21.00
$\frac{1}{4}$ L from A.P. ...	23.59	4		94.36	6.00	5.50	4		22.00
$\frac{2}{4}$ L „ ...	5.83	2		11.66	2.95	-	2		-
Amidships ...	-	4		-	-	-	4		-
$\frac{3}{4}$ L from F.P. ...	11.66	2		23.32	5.59	5.59	2		11.18
$\frac{1}{4}$ L „ ...	47.175	4		188.70	22.68	22.68	4		90.72
F.P. ...	106.00	1		106.00	51.00	51.00	1		51.00
Total ...				477.04					195.90

Mean actual sheer aft = **Deficient**  
 Mean standard sheer aft

Mean actual sheer forward = **Deficient**  
 Mean standard sheer forward

Length of enclosed superstructure forward of amidships = } **Deficient**  
 „ „ aft of „ = } **there.**

Correction =  $\frac{\text{Difference between sums of products}}{18} \left( .75 - \frac{S}{2L} \right) = \frac{281.14}{18} (.75 - .1756) = 8.97"$   
 If limited on account of midship superstructure. **57.44** If limited to maximum allowance of 1½ ins. per 100 ft.

<b>Deduction for Tropical Freeboard.</b> <b>Addition for Winter and Winter North Atlantic Freeboard.</b> Depth to Freeboard Deck = <b>24' 55</b> ✓ Summer freeboard = <b>3' 78</b> ✓ Moulded draught (d) = <b>20' 77</b> ✓ Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = <b>5' 19" = 13 cms.</b> Addition for Winter North Atlantic Freeboard (if required) = <b>5' 19" + 4' 30" = 9' 49" = 24 cms.</b> ✓	<b>Deduction for Fresh Water.</b> Displacement in salt water at summer load water line $\Delta =$ Tons per inch immersion at summer load water line $T =$ Deduction = $\frac{\Delta}{40 T}$ inches $\frac{d}{4} = 13 \text{ cms.}$ ✓	<b>TABULAR FREEBOARD</b> corrected for Flush Deck (if required) Correction for coefficient $\frac{80 + .68}{1.36} = \frac{1.48}{1.36}$ <table border="1"> <tr> <th></th><th>+</th><th>-</th></tr> <tr> <td>Depth Correction ...</td><td>-</td><td>11.53</td></tr> <tr> <td>Deduction for superstructures ...</td><td>-</td><td>28.18</td></tr> <tr> <td>Sheer correction ...</td><td>8.97</td><td>-</td></tr> <tr> <td>Round of Beam correction ...</td><td>-</td><td>-</td></tr> <tr> <td>Correction for Thickness of Deck amidships ...</td><td>-</td><td>-</td></tr> <tr> <td>Other corrections, scantlings, etc. ...</td><td>-</td><td>-</td></tr> <tr> <td></td><td>8.97</td><td>39.71</td></tr> </table> Summer Freeboard = <b>45' 33 = 115 cms.</b>		+	-	Depth Correction ...	-	11.53	Deduction for superstructures ...	-	28.18	Sheer correction ...	8.97	-	Round of Beam correction ...	-	-	Correction for Thickness of Deck amidships ...	-	-	Other corrections, scantlings, etc. ...	-	-		8.97	39.71
	+	-																								
Depth Correction ...	-	11.53																								
Deduction for superstructures ...	-	28.18																								
Sheer correction ...	8.97	-																								
Round of Beam correction ...	-	-																								
Correction for Thickness of Deck amidships ...	-	-																								
Other corrections, scantlings, etc. ...	-	-																								
	8.97	39.71																								

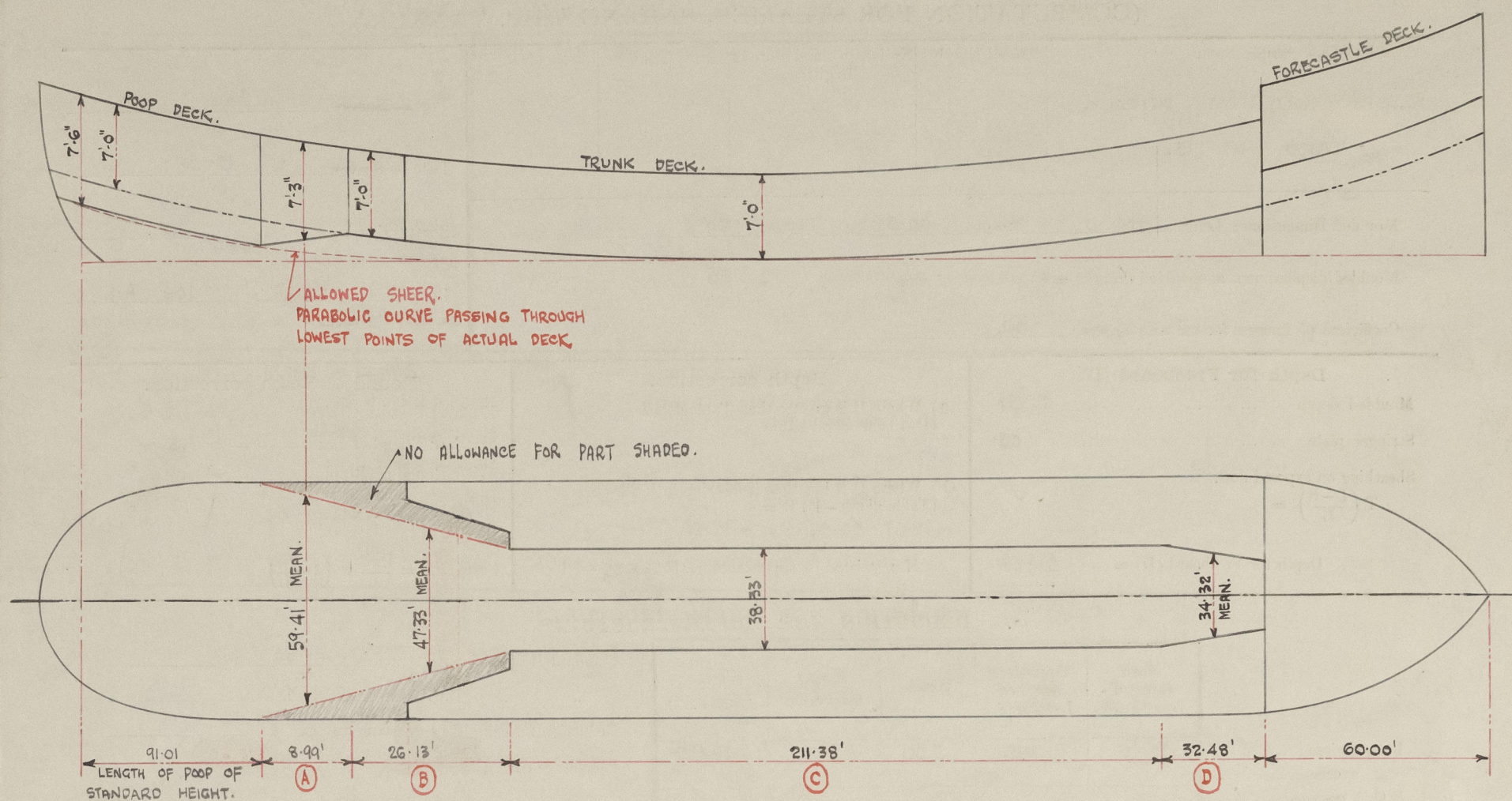
### SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, Steel, Deck:

Tropical Fresh Water Line above Centre of Disc ...	26
Fresh Water Line „ „ ...	13
Tropical Line „ „ ...	13
Winter Line below „ „ ...	13
Winter North Atlantic Line „ „ ...	24

Tropical Fresh Water Freeboard ...	89
Fresh Water „ „ ...	102
Tropical „ „ ...	102
Winter „ „ ...	128
Winter North Atlantic „ „ ...	139



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.



# TRUNK EQUIVALENT LENGTH

(A)  $8.99 \times \frac{59.41}{62.50} = 8.55'$

(B)  $26.13 \times \frac{47.33}{62.50} = 19.79'$

(C)  $211.38 \times \frac{38.33}{62.50} = 129.63'$

(D)  $32.48 \times \frac{34.32}{62.50} = 17.83'$   
167.25'

The mean covered length of poop allowed is the length of superstructure having a height equal to the standard height, viz 7'6".

The erection lettered (A) has been considered as a trunk of varying breadth and height. The erection lettered (B) has been considered as a trunk of varying breadth.

The allowed sheer ordinates aft are the ordinates of a parabolic curve drawn through the actual freeboard deck at the A.P. and 91.01' forward of the A.P.

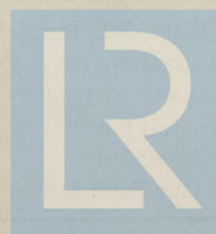
Trade of ship.....

Names of sister ships.....

Builder's name and yard number.....

Owners.....

Fee £.....



© 2021

Lloyd's Register  
Foundation