

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

JUL 16 1937

Ship's Name **DUNERA** Official Number **165552** Nationality and Port of Registry **British London** Gross Tonnage **11197** Date of Build **1937**

Port of Survey **Glasgow**

Date of Survey **July 1937**

Surveyor's Signature **Norman Doherty**

Particulars of Classification **+100 A1 with fwd. Contemplates**

Moulded Dimensions: Length **490.0** Breadth **63.0** Depth **35.04**

Moulded displacement at moulded draught = 85 per cent. of moulded depth **18561** tons

Coefficient of fineness for use with Tables **.706 .707**

Depth for Freeboard (D).		Depth correction.		Round of Beam correction.	
Moulded depth	35.04	(a) Where D is greater than Table depth (D - Table depth) R =		Moulded Breadth (B)	63.0
Stringer plate	.04	(35.10 - 32.67) × 3 = + 7.29		Standard Round of Beam = $\frac{B \times 12}{50}$	15.12
Sheathing on exposed deck		(b) Where D is less than Table depth (if allowed) (Table depth - D) R =		Ship's Round of Beam	9 inches
$T \left(\frac{L-S}{L} \right) = .21 \times .1132$.02			Difference	6.12
Depth for Freeboard (D) =	35.10	If restricted by superstructures	✓	Restricted to	
				Correction = $\frac{\text{Diff}^2}{4} \times \left(1 - \frac{S_1}{L} \right)$	$\frac{6.12^2}{4} \times \frac{1978}{4} = +.30$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)	
Poop enclosed	29.00	29.00	8'-6"	-	29.00	Standard Height of Superstructure 7.5
" overhang	9.50	4.75		-	4.75	" " R.Q.D.
R.Q.D. enclosed						Deduction for complete superstructure 42
" overhang						Percentage covered $\frac{S}{L} = 88.68.76$
Bridge enclosed	262.60	262.60	8'-6"	-	262.60	" " $\frac{S_1}{L} = 80.22.26$
" overhang aft	2.02	1.51		-	1.51	" " $\frac{E}{L} = 80.22.26$
" overhang forward	38.30	19.15		-	19.15	Percentage from Table, Line A. ✓
Fore enclosed	58.98	58.98	8'-6"	-	58.98	(corrected for absence of forecastle (if required))
" overhang	26.35.77	13.17.38		-	13.17.38	Percentage from Table, Line B. 75.57.62
Trunk aft Fore bridge	7.75	3.87		-	3.87	(corrected for absence of forecastle (if required))
" forward						Interpolation for bridge less than .2L (if required) -
Tonnage opening aft						Deduction = $42 \times \frac{75.62}{100} = -31.74$
" forward						
Total	434.50	393.03			393.03	

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P.	59.00	1		59.00	28.63	28.63	1		28.63
$\frac{1}{4}$ L from A.P.	26.255	4		105.02	10.0	10.00	4		40.00
$\frac{2}{8}$ L	6.49	2		12.98	1.86	1.86	2		3.72
Amidships	-	4		-	-	-	4		-
$\frac{3}{8}$ L from F.P.	12.98	2		25.96	12.75	12.75	2		25.50
$\frac{1}{4}$ L	52.51	4		210.04	43.31	43.31	4		173.24
F.P.	118.00	1		118.00	89.50	89.50	1		89.50
Total				531.00					360.59

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{170.41}{18} \left(.75 - \frac{.4434}{2} \right) = +2.90$

If limited on account of midship superstructure.

Mean actual sheer aft = Deficient

Mean actual sheer forward = Deficient

Length of enclosed superstructure forward of amidships =

" " aft of " =

Deduction for Tropical Freeboard.

Addition for Winter and Winter North Atlantic Freeboard.

Depth to Freeboard Deck = 35.08

Summer freeboard = 12.18

Moulded draught (d) = 22.90

Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches =

Addition for Winter North Atlantic Freeboard (if required) =

Deduction for Fresh Water.

Displacement in salt water at summer load water line

$\Delta =$

Tons per inch immersion at summer load water line

T =

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

$\frac{d}{4} = 5.72 = 5\frac{3}{4}$

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient

$\frac{707 + .68}{1.36} = \frac{1.387}{1.36}$

Depth Correction

Deduction for superstructures

Sheer correction

Round of Beam correction

Correction for Thickness of Deck amidships

Other corrections, scantling, etc.

Summer Freeboard = 146.25

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

Tropical Fresh Water Line above Centre of Disc ... 5 $\frac{3}{4}$

Fresh Water Line " " ... 5 $\frac{3}{4}$

Tropical Line " " ... Nil

Winter Line below " " ... Nil

Winter North Atlantic Line " " ... Nil

Tropical Fresh Water Freeboard ... 12'-2 $\frac{1}{4}$

Fresh Water " " ... 11'-8 $\frac{1}{2}$

Tropical " " ... 12'-2 $\frac{1}{4}$

Winter " " ... 12'-2 $\frac{1}{4}$

Winter North Atlantic " " ... 12'-2 $\frac{1}{4}$

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.

Bridge

Recess.

aft. $\frac{4.5 \times 19.92}{59.0} = 1.52$

Forward $\left\{ \begin{array}{l} \frac{2 \times 2.25 \times 13.25}{63} = .95 \\ \frac{2 \times 2.25 \times 6.04}{63} = .43 \end{array} \right\}$

$\frac{2.90}{2.90}$

265.50

Overhang aft = $.5 + 1.52 = 2.02$

Overhang forward = $36.92 + 1.38 = 38.30$

$\frac{-2.40}{262.80}$ equivalent unload.

Foremaste

Recess

$2.25 \times 12.6 = 28.3$

$15.75 \times 25.42 = \frac{400.3}{428.6} \div 5.025 = - \frac{8.53}{56.47}$

Projection $\frac{6.75 \times 18.67}{50.25} = + \frac{2.51}{58.98}$ clow

65.00

$\frac{20.33.75}{83.33.75}$

$\frac{58.98}{26.35.77}$

Trade of ship _____

Names of sister ships Dilwara

Builder's name and yard number Barclay, Curle & Co. Ltd. 663.

Owners _____

Fee £ _____