

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

Jha 3846

Ship's Name "DENDALE"	Official Number 168186	Nationality and Port of Registry British London	Gross Tonnage 826512 <i>8298</i> <i>net 2.7.47</i>	Date of Build 1941	Port of Survey Liverpool
Moulded Dimensions: Length 460.0' Breadth 59.0' Depth 33.94' <i>461' to center of rudder stock</i>				Date of Survey During construction	Surveyor's Signature A.S. Jackson.
Moulded displacement at moulded draught = 85 per cent. of moulded depth 17784 tons <i>Displacement 24.0, 18920 tons, T.P. 55.6</i>				Particulars of Classification 10001 "Carrying Petroleum in Bulk", "Longitudinal framing at bottom and at deck."	
Coefficient of fineness for use with Tables .791 " 28'-0", 17,100 " " 56.2					

Depth for Freeboard (D).	Depth correction.	Round of Beam correction.
Moulded depth <i>from ship</i> ... 33.94	(a) Where D is greater than Table depth (D - Table depth) R = (34.00 - 30.73) x 3 = +9.81" 3.27	Moulded Breadth (B) 59.0'
Stringer plate06	(b) Where D is less than Table depth (if allowed) (Table depth - D) R = ✓	Standard Round of Beam = $\frac{B \times 12}{50} = \mathbf{14.16}$
Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$ ✓	If restricted by superstructures ✓	Ship's Round of Beam = 14.16
Depth for Freeboard (D) = 34.00		Difference = .04
		Restricted to ✓
		Correction = $\frac{\text{Diff}^*}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{.04}{4} \times .5936 = \mathbf{+.01"}\mathbf{✓}$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)	
Poop enclosed ...	96.09	96.09	7.5'	✓	96.09	Standard Height of Superstructure 7.50'
" overhang ...	96.09		7.5'			" " R.Q.D. ✓
R.Q.D. enclosed	✓					Deduction for complete superstructure 42.00"
" overhang	✓					Percentage covered $\frac{S}{L} = \mathbf{41.49}$
Bridge enclosed <i>See sketch</i>	33.92	33.92	7.5'	✓	33.92	" " $\frac{S_1}{L} = \mathbf{40.64}$
" overhang aft	10.75	8.06	7.5'		8.06	" " $\frac{E}{L} = \mathbf{40.64}$
" overhang forward	2.44	1.22	7.5'		1.22	Percentage from Table, Line A. Tanker 31.64
F'cle enclosed ...	48.04	48.04	7.5'	✓	48.04	(corrected for absence of forecastle (if required)) ✓
" overhang ...	✓					Percentage from Table, Line B. ✓
Trunk aft ...	✓					(corrected for absence of forecastle (if required)) ✓
" forward ...	✓					Interpolation for bridge less than .2L (if required) ✓
Tonnage opening aft ...	✓					Deduction = 31.64 x 42.00 = -13.29"
" " forward	✓					
Total ...	191.24	187.33			187.33	

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product	
A.P. ...	56.10	1	56.10	56.75	56.75	1	56.75			Mean actual sheer aft = Excess
$\frac{1}{4}$ L from A.P. ...	24.695	4	99.86	26.68	26.68	4	106.72			Mean actual sheer forward = Excess
$\frac{2}{4}$ L " ...	6.17	2	12.34	7.25	7.25	2	14.50			Mean standard sheer forward
Amidships ...	-	4	-	-	-	4	-			Length of enclosed superstructure forward of amidships =
$\frac{3}{4}$ L from F.P. ...	12.34	2	24.68	12.50	12.50	2	25.00			" " aft of " = Tanker.
$\frac{1}{4}$ L " ...	49.93	4	199.72	53.06	53.06	4	212.24			
F.P. ...	112.20	1	112.20	112.44	112.44	1	112.44			
Total ...			504.90				527.66			

Correction = $\frac{\text{Difference between sums of products}}{18} \left(\frac{.75 - S}{2L} \right) = \frac{22.75}{18} \left(\frac{.75 - .1074}{2} \right) = \mathbf{-.69}$

If limited on account of midship superstructure. **✓**

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

Deduction for Tropical Freeboard.
Addition for Winter and Winter North Atlantic Freeboard.

Depth to Freeboard Deck = **34.00**

Summer freeboard = **6.67**

Moulded draught (d) = **17.33**

Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = **6.83 = 6 $\frac{3}{4}$ "**

Addition for Winter North Atlantic Freeboard (if required) = **6.83 + 4.61 = 11.44 = 11 $\frac{1}{2}$ "**

Deduction for Fresh Water.

Displacement in salt water at summer load water line

$\Delta = \mathbf{16695}$

Tons per inch immersion at summer load water line

T = **56**

Deduction = $\frac{\Delta}{40T}$ inches = **7.46**

= **7 $\frac{1}{2}$ "**

TABULAR FREEBOARD corrected for Fresh Deck (if required)

Correction for coefficient

$\frac{.79 + .68}{1.36} = \mathbf{1.47/1.36}$

77.95

84.205

	+	-
Depth Correction ...	9.81	-
Deduction for superstructures ...	-	13.29
Sheer correction ...	-	.69
Round of Beam correction01	-
Correction for Thickness of Deck amidships ...	-	-
Other corrections, scantlings, etc. ...	-	-
9.82	13.98	-4.16

Summer Freeboard = **80.049**SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, ~~Steel~~, Steel, Deck

Tropical Fresh Water Line above Centre of Disc ... **14 $\frac{1}{4}$ "**

Fresh Water Line " " ... **7 $\frac{1}{2}$ "**

Tropical Line " " ... **6 $\frac{3}{4}$ "**

Winter Line below " " ... **6 $\frac{3}{4}$ "**

Winter North Atlantic Line " " ... **11 $\frac{1}{2}$ "**

Tropical Fresh Water Freeboard ... **5 $\frac{1}{4}$ "**

Fresh Water " " ... **6 $\frac{1}{2}$ "**

Tropical " " ... **6 $\frac{1}{4}$ "**

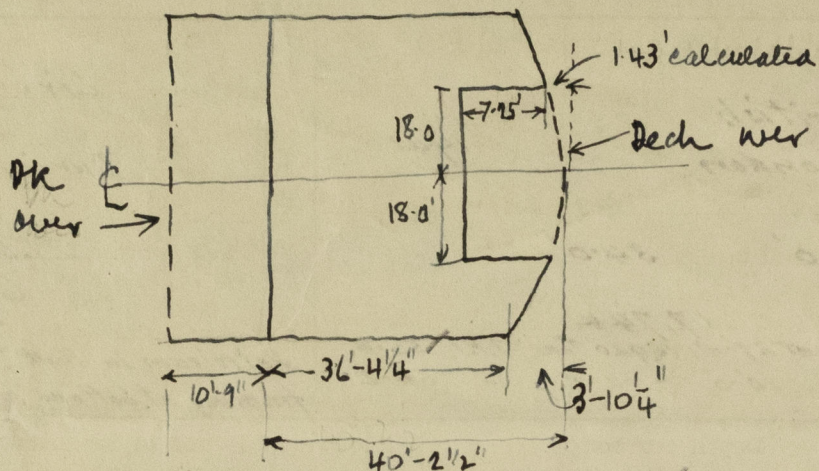
Winter " " ... **7 $\frac{1}{4}$ "**

Winter North Atlantic " " ... **7 $\frac{1}{2}$ "**

Dawdale.

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 bridge



$$3.85 \times \left(\frac{18}{295}\right)^2 = 1.43$$

Bow front	$59.0' \times \frac{1}{3} \times 3.85'$	$= 75.7 (ft)^2$
Rears	$36 \times \frac{2}{3} \times 1.43$	$= 34.3 "$
	$36 \times 7.25'$	$= 261.0 "$
		$371.0 "$
		59.0

$$\frac{36.35}{3.86}$$

$$40.21$$

$$-6.29$$

$$33.92 = \text{equiv inclined.}$$

$$6.29$$

$$3.85$$

$$2.44 = \text{equiv for overhang.}$$

$$\frac{36 \times 4 \frac{1}{4}}{10 \times 9} = 12 \frac{1}{4}$$

Trade of ship Oil Tanker adapted for use for special Admiralty purposes.

Names of sister ships "EMPIRE STEEL", "DILOMA".

Builder's name and yard number Messrs Cammell Laird & Co. Ltd. B'head.

Owners His Majesty, represented by the Ministry of Shipping.

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