

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

Ship's Name "DENBYDALE"	Official Number 168051	Nationality and Port of Registry BRITISH GLASGOW	Gross Tonnage 8145	Date of Build 1940	Port of Survey Glasgow
Moulded Dimensions: Length 460.64 Breadth 61.0 Depth 33.25					Date of Survey while building
Moulded displacement at moulded draught = 85 per cent. of moulded depth 17623 tons					Surveyor's Signature R. Dunsmead
Coefficient of fineness for use with Tables .777					Particulars of Classification +100A1 "CARRYING PETROLEUM IN BULK" (CONTEMPLATED)

Depth for Freeboard (D).	Depth correction.	Round of Beam correction.
Moulded depth ... 33.25	(a) Where D is greater than Table depth (D - Table depth) R = (33.31 - 30.71) × 3 = +7.80	Moulded Breadth (B) 61.0
Stringer plate ... 0.7806	2.60	Standard Round of Beam = $\frac{B \times 12}{50} = 14.64$
Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) = \text{NIL}$ ✓	(b) Where D is less than Table depth (if allowed) (Table depth - D) R = ✓	Ship's Round of Beam = 15
Depth for Freeboard (D) = 33.31	If restricted by superstructures	Difference .36
		Restricted to ✓
		Correction = $\frac{\text{Diff}}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{.36}{4} \times .5884 = -.05$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)	
Poop enclosed ... Equiv. 96.64	96.64	96.64	7'-6"	-	96.64	Standard Height of Superstructure 7.5'
overhang ... 44.44	44.44					" " R.Q.D. ✓
Q.D. enclosed ... 97.89						Deduction for complete superstructure 42
overhang Equiv. 45.21	45.21	45.21	7'-6"	-	45.21	Percentage covered $\frac{S}{L} = 41.35$
Bridge enclosed ... 45.21	45.21	45.21	7'-6"	-	45.21	" " $\frac{S_1}{L} = 41.16$
overhang aft ... 3.54	2.65	2.65	-	-	2.65	" " $\frac{E}{L} = 41.16$
overhang forward 4.42						Percentage from Table, Line A. Tanker 32.16
Deck enclosed ... 45.08	45.08	45.08	7'-6"	-	45.08	(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 = 42 × 32.16 = -13.51
" " forward						
Total ... 190.47	189.58				189.58	

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product		
A.P. ...	56.06	1		56.06	60.0	60.00	1		60.00	Mean actual sheer aft =	
1/4 L from A.P. ...	24.95	4		99.80	26.75	26.75	4		107.00	Mean standard sheer aft =	
1/2 L " ...	6.165	2		12.33	6.63	6.63	2		13.26	} Encor.	
Amidships ...	-	4		-	0	-	4		-		Mean actual sheer forward =
3/4 L from F.P. ...	12.33	2		24.66	12.75	12.75	2		25.50		Mean standard sheer forward =
1/4 L " ...	49.90	4		199.60	50.63	50.63	4		202.52	Length of enclosed superstructure forward of amidships =	
F.P. ...	112.13	1		112.13	114.0	114.00	1		114.00	" " aft of " =	
Total ...				504.58					522.28	} Does not apply.	
Correction = $\frac{\text{Difference between sums of products}}{18} \left(\frac{.75 - S}{2L} \right) = \frac{17.70}{18} \left(\frac{.75 - .2068}{.5432} \right) = -.53$											
If limited on account of midship superstructure.										If limited to maximum allowance of 1 1/2 ins. per 100 ft. ✓	

Deduction for Tropical Freeboard.	Deduction for Fresh Water.	TABULAR FREEBOARD corrected for Fresh Deck (if required)	77.86
Addition for Winter and Winter North Atlantic Freeboard.	Displacement in salt water at summer load water line	Correction for coefficient $\frac{.777 + .68}{1.36} = \frac{1.457}{1.36}$	83.42
Depth to Freeboard Deck = 33.31	$\Delta = 16786$	Depth Correction ... 7.80	
Summer freeboard = 6.44	Tons per inch immersion at summer load water line	Deduction for superstructures ... -13.51	
Moulded draught (d) = 26.87	T = 57.66	Sheer correction53	
Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = 6.72 = 6 3/4"	Deduction = $\frac{\Delta}{40T}$ inches = 7 1/4"	Round of Beam correction05	
Addition for Winter North Atlantic Freeboard (if required) = 6.72 + 4.61 = 11.33 = 11 1/4"	Full Dr ² Full Disp(S.N) T.P.I.	Correction for Thickness of Deck amidships ... 1	
	28'-2" 17567 58.07	Other corrections, scantlings, etc. ...	
	26'-2" 16185 57.34		
		7.80 14.09 -6.29	
		Summer Freeboard = 77.13	

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

Tropical Fresh Water Line above Centre of Disc ...	14"	Tropical Fresh Water Freeboard ...	6'-5 1/4"
Fresh Water Line " " ...	7 1/4"	Fresh Water " " ...	5'-3 1/4"
Tropical Line " " ...	6 3/4"	Tropical " " ...	5'-10"
Winter Line below " " ...	6 3/4"	Winter " " ...	5'-10 1/2"
Winter North Atlantic Line " " ...	11 1/4"	Winter North Atlantic " " ...	7'-0"
			7'-4 1/2"

110 DEC 1940

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.

Trade of ship *International Trade.*

Names of sister ships *M/V. "DARKDALE"*

Builder's name and yard number *Blythwood Shipbuilding Co. Ltd. N° 62.*

Owners *His Majesty represented by the Minister of Shipping*

Est Fee £ *15*

Freeboard request attached.

Approved plans in London Office with First Entry on "DARKDALE"



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Foundation