

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER)

Index No. **39847.**
(For London Office only).**5 OCT 1948**

Ship's Name **"DENMAN"** Official Number **BRITISH** Nationality and Port of Registry **NEWCASTLE N.S.W.** Gross Tonnage **1948** Date of Build **1948**

Port of Survey **NEWCASTLE N.S.W.** Date of Survey **WHILEST BUILDING**

Moulded Dimensions: Length **270.5** Breadth **46.0** Depth **21.5**
TO CENTRE OF RUDDER SECK

Moulded displacement at moulded draught = 85 per cent. of moulded depth **4469** tons

Surveyor's Signature **D. B. P. E. H.**

Particulars of Classification **+ 10041**

Coefficient of fineness for use with Tables **688**

Depth for Freeboard (D)	Depth correction	Round of Beam correction
Moulded depth 21.5	(a) Where D is greater than Table depth (D—Table depth) R = 21.55 - 18.04 = 2.081 = + 7.30"	Moulded Breadth (B) 46.0
Stringer plate 86	(b) Where D is less than Table depth (if allowed) (Table depth—D) R = 8.82	Standard Round of Beam = $\frac{B \times 12}{50} = \frac{46.0 \times 12}{50} = 11.04$
Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$	If restricted by superstructures ✓	Ship's Round of Beam 11.04
Depth for Freeboard (D) = 21.5		Difference 7.30 - 11.04 = - 3.74
		Restricted to 7.30
		Correction = $\frac{\text{Diff}^e}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{0.04}{4} \times \frac{5176}{5176} = + 0.01$

DEDUCTION FOR SUPERSTRUCTURES

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed	15.11	15.11	7.5	✓	15.11
" overhang	17.64	8.82	✓		8.82
R.Q.D. enclosed					
" overhang					
Bridge enclosed	76.86	76.86	7.5	✓	76.86
" overhang aft	78	58	✓		58
" overhang forward	5.53	2.76	✓		2.76
P'cie enclosed	26.50	26.50	7.5	✓	26.50
" overhang					
Trunk aft					
" forward					
Tonnage opening aft					
" forward					
Total	142.42	130.63			130.63

Standard Height of Superstructure **6.205**

" " R.Q.D. **33.05**

Deduction for complete superstructure **33.05**

Percentage covered $\frac{S}{L} = \frac{130.63}{270.5} = 52.65$

" " $\frac{S_1}{L} = \frac{130.63}{270.5} = 48.29$

" " $\frac{E}{L} = \frac{130.63}{270.5} = 48.29$

Percentage from Table, Line A. **✓**

(corrected for absence of forecastle (if required))

Percentage from Table, Line B. **34.54**

(corrected for absence of forecastle (if required))

Interpolation for bridge less than 2L (if required) **✓**

Deduction = **33.05 x 34.54 = - 11.42"**

SHEER CORRECTION

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P.	37.05	1		37.05	36.06	36.06	1		36.06
$\frac{1}{2}L$ from A.P.	16.485	4		65.94	16.06	16.06	4		64.24
$\frac{2}{6}L$ "	4.075	2		8.15	3.375	3.375	2		6.75
Amidships	--	4		--	--	--	4		--
$\frac{2}{6}L$ from F.P.	8.15	2		16.30	8.06	8.06	2		16.12
$\frac{1}{2}L$ "	32.97	4		131.88	32.31	32.31	4		129.24
F.P.	74.10	1		74.10	75.56	75.56	1		75.56
Total				333.42					327.97

Correction = $\frac{\text{Difference between sums of products}}{18} \left(\frac{.75 - \frac{S}{2L}}{.4868} \right) = \frac{5.45}{18} \times \left(\frac{.75 - .2632}{.4868} \right) = + .15"$

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

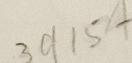
Deduction for Tropical Freeboard	Deduction for Fresh Water	TABULAR FREEBOARD corrected for Flush Deck (if required)
Addition for Winter and Winter North Atlantic Freeboard	Displacement in salt water at Summer load water line 18.0' = 4402.5	Correction for coefficient 688 + 68 = 1.368
Depth to Freeboard Deck = 21.57	$\Delta = 18.5' = 4537.5$	Depth Correction 7.30
Summer freeboard = 2.77	Tons per inch immersion at Summer load water line 24.35	Deduction for superstructures 11.42
Moulded draught (d) = 18.80	$T = 18.0' = 24.0$	Sheer correction .15
Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = 4.70 = 4$\frac{3}{4}$	Deduction = $\frac{\Delta}{40T}$ inches = 4.73	Round of Beam correction .01
Addition for Winter North Atlantic Freeboard (if required) = 6$\frac{3}{4}$	= 4$\frac{3}{4}$	Correction for Thickness of Deck amidships .26
		Other corrections, scantlings, etc. -
		Summer Freeboard = 33.13



SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, **W**, Steel, Deck:—

Tropical Fresh Water Line above Centre of Disc	9$\frac{1}{2}$"
Fresh Water Line	4$\frac{3}{4}$"
Tropical Line	4$\frac{3}{4}$"
Winter Line below	4$\frac{3}{4}$"
Winter North Atlantic Line	6$\frac{3}{4}$"

Tropical Fresh Water Freeboard	2$\frac{1}{2}$ 9$\frac{1}{4}$"
Fresh Water	1$\frac{1}{2}$ 11$\frac{3}{4}$"
Tropical	2$\frac{1}{2}$ 4$\frac{1}{2}$"
Winter	2$\frac{1}{2}$ 4$\frac{1}{2}$"
Winter North Atlantic	3$\frac{1}{2}$ 2"

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 FRONT
8' 7"  10' 
OVER HANG AT SIDES

$$\begin{array}{r} 8.58 \\ 3.05 \\ \hline 5.53 \end{array}$$
$$0.6 \text{ mg} = 14.75 + 2.89$$
$$= 14.75 + 2.89$$

Trade of ship

AUSTRALIAN COAST.

Names of sister ships

DULVERTON, "DELUNGRA" ETC

STATE DOCKYARD,

Builder's name and yard number

N.S.W GOVT. ENGINEERING & SHIPBUILDING UNDERTAKING. YARD No 27.

Owners

COMMONWEALTH OF AUSTRALIA (DEPT. OF SUPPLY AND SHIPPING.)

W Fee £ *Charged with F.E.*

W. B. E. Eakern

Surveyor to Lloyd's Register

27th September 1948.

Lloyd's Register
Foundation