

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

Computation of Freeboard for ~~Steamer~~ *Boop Budge* *freecastle* *16/9/41*

having *Boop Budge freecastle*

(Type of Superstructures.)

Ship's Name *Aase Maersk.* Nationality and Port of Registry *British ADEP* Official Number *174208* Gross Tonnage *6184* Date of Build *1930-9*

Moulded Dimensions: Length *406.6* Breadth *54.5* Depth *32.25*

Moulded displacement at moulded draught = 85 per cent. of moulded depth *9900* (T.P.I. - 46.25 tons)

Coefficient of fineness for use with Tables *✓ 0.79 (assumed)*

Port of Survey *Bombay*

Date of Survey *February 1941*

Name of Surveyor *W. H. Southwell*
John Rundle.

Particulars of Classification *7100 A1*
Carrying petroleum in bulk

Depth for Freeboard (D)		Depth correction		Round of Beam correction	
Moulded depth	32.25	(a) Where D is greater than Table depth (D - Table depth) R = (32.31 - 27.11) × 3 = +15.60"		Moulded Breadth (B)	54.5
Stringer plate	7.25	(b) Where D is less than Table depth (if allowed) (Table depth - D) R =		Standard Round of Beam = $\frac{B \times 12}{50}$	13.08"
Sheathing on exposed deck		If restricted by superstructures		Ship's Round of Beam	13.50"
T $\left(\frac{L-S}{L}\right)$ =				Difference	Excess 42"
Depth for Freeboard (D) =	32.31			Restricted to	
				Correction = $\frac{\text{Diff}^{\circ}}{4} \times \left(1 - \frac{S_1}{L}\right)$	$\frac{42}{4} \times \frac{39.45}{40.5} = -10.4"$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed	96.0	96.00	7.5	96.00	96.00
" overhang					
R.Q.D. enclosed					
" overhang		37.00	7.5	33.30	33.30
Bridge enclosed	37.0	33.30	7.5	33.30	33.30
" overhang aft					
" overhang forward					
Fore enclosed	37.0	37.00	7.5	37.00	37.00
" overhang					
Trunk aft	42.42	45.86	5.0	5.5 × 9	27.52
" forward	94.17	30.32	5.0	5/7.5	20.21
Tonnage opening aft					
" forward		246.18			
Total	170.00	442.48			214.03

Standard Height of Superstructure	7.5
" " R.Q.D.	
Deduction for complete superstructure	42.00
Percentage covered $\frac{S}{L}$	41.81
" " $\frac{S_1}{L}$	59.63
" " $\frac{E}{L}$	52.64
Percentage from Table, Line <i>a. Tanker</i>	43.90
(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 × 43.90 = -18.44

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P.	50.66	1		50.66	48.00	48.00	1		48.00
1/4 L from A.P.	22.54	4		90.16	21.00	21.00	4		84.00
2/4 L	5.57	2		11.14	4.00	4.00	2		8.00
Amidships	0	4		0	0	0	4		0
3/4 L from F.P.	11.14	2		22.29	11.00	11.00	2		22.00
1/4 L	45.08	4		180.36	44.00	44.00	4		164.00
F.P.	101.32	1		101.32	96.75	96.75	1		96.75
Total				455.93					422.75

Correction = $\frac{\text{Difference between sums of products}}{18} \left(\frac{75-S}{2L} \right) = \frac{33.18}{18} \left(\frac{75-20.90}{54.10} \right) = +1.00"$

If limited on account of midship superstructure. *✓*If limited to maximum allowance of 1 1/2 ins. per 100 ft. *✓*

Deduction for Tropical Freeboard.

Addition for Winter and Winter North Atlantic Freeboard.

Depth to Freeboard Deck	=	32.31
Summer freeboard	=	5.62
Moulded draught (d)	=	26.69

Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = $6.67 = 6 \frac{3}{4}$ "Addition for Winter North Atlantic Freeboard (if required) = $6.67 + 4.07 = 10.74 = 10 \frac{3}{4}$ "

Deduction for Fresh Water.

Displacement in salt water at summer load water line

Δ =

Tons per inch immersion at summer load water line

T =

Deduction = $\frac{\Delta}{40T}$ inches = $7 \frac{1}{2}"$

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient

$\frac{79.468}{1.36} = \frac{1.47}{1.36} =$

	+	-
Depth Correction	15.60	
Deduction for superstructures		18.44
Sheer correction	1.00	
Round of Beam correction		.04
Correction for Thickness of Deck amidships		
Other corrections, scantlings, etc.		
	16.60	18.48

Summer Freeboard = 67.38

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

Tropical Fresh Water Line above Centre of Disc	14 1/4"
Fresh Water Line	7 1/2"
Tropical Line	6 3/4"
Winter Line below	6 3/4"
Winter North Atlantic Line	10 3/4"

Tropical Fresh Water Freeboard	5'-7 1/2"
Fresh Water	4'-5 1/4"
Tropical	5'-0"
Winter	5'-0 3/4"
Winter North Atlantic	6'-2 1/4"
	6'-6 1/4"

1-9 MAY 1941

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