

Lloyd's Register of Shipping.

Index. No. 38/38
(For London Office only).

SURVEYS FOR FREEBOARD.

14 SEP 1945

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

Ship's Name "KING ALFRED" (EX. "EMPIRE RAY")	Official Number 167003	Nationality and Port of Registry BRITISH LONDON	Gross Tonnage 6919	Date of Build 1941	Port of Survey CARDIFF
Moulded Dimensions: Length 425'-5 1/2" Breadth 56'-0" Depth 36'-10"					Date of Survey 13TH SEPTEMBER 1945
Moulded displacement at moulded draught = 85 per cent. of moulded depth 16082 tons					Surveyor's Signature J. H. Mavor
Coefficient of fineness for use with Tables .7546					Particulars of Classification CONTEMPLATED

Depth for Freeboard (D).	Depth correction.	Round of Beam correction.
Moulded depth ... 36'-8 3/4"	(a) Where D is greater than Table depth (D - Table depth) R = (36'-8 3/4" - 28'-3 3/4") 3 = +25'-5 7/8"	Moulded Breadth (B) 56'-00"
Stringer plate055	(b) Where D is less than Table depth (if allowed) (Table depth - D) R = ✓	Standard Round of Beam = $\frac{B \times 12}{50} = \frac{56 \times 12}{50} = \mathbf{13'-4 4/5"}$
Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$ ✓	If restricted by superstructures ✓	Ship's Round of Beam = 14'-00"
Depth for Freeboard (D) = 36'-8 3/4"		Difference -5'-6"
		Restricted to
		Correction = $\frac{\text{Diff}^{\circ}}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{56}{4} \times .91832 = \mathbf{-13'-1 1/2"}$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed ...					
„ overhang ...					
R.Q.D. enclosed ...					
„ overhang ...					
Bridge enclosed ...					
„ overhang aft ...					
„ overhang forward ...					
F'cle enclosed ...	34'-7 1/2"	34'-7 1/2"	7'-5"	✓	34'-7 1/2"
„ overhang ...					
Trunk aft ...					
„ forward ...					
Tonnage opening aft ...					
„ „ forward ...					
Total ...	34'-7 1/2"	34'-7 1/2"			34'-7 1/2"

Standard Height of Superstructure	7'-5"
„ „ R.Q.D.	✓
Deduction for complete superstructure	42'
Percentage covered $\frac{S}{L} =$	8.168%
„ „ $\frac{S_1}{L} =$	
„ „ $\frac{E}{L} =$	
Percentage from Table, Line A.	4.084
(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 = $42 \times .04084 =$	-1.72

SHEER CORRECTION.

Station	Standard Ordinate	S M	Product	Actual Ordinate	Effective Ordinate	S M	Product
A.P. ...	52.55	1	52.55	54.00	54.00	1	54.00
$\frac{1}{4}$ L from A.P. ...	23.38	4	93.52	23.75	23.75	4	95.00
$\frac{3}{8}$ L „ ...	5.78	2	11.56	5.25	5.25	2	10.50
Amidships ...	—	4	—	—	—	4	—
$\frac{3}{8}$ L from F.P. ...	11.56	2	23.12	11.00	11.00	2	22.00
$\frac{1}{4}$ L „ ...	46.77	4	187.08	47.375	47.38	4	189.52
F.P. ...	105.09	1	105.09	107.75	107.75	1	107.75
Total ...			472.92				478.77

Mean actual sheer aft = **Excess**
Mean standard sheer aftMean actual sheer forward = **Excess**
Mean standard sheer forwardLength of enclosed superstructure forward of amidships = **NIL**
„ „ aft of „ = **NIL**

Sheer aft	52.55	1	52.55	54.00	1	54.00	54.00
	23.38	3	70.14	23.75	3	71.25	71.25
	5.78	3	17.34	5.25	3	15.75	15.75
			140.03			141.00	
Sheer Forward	105.09	1	105.09	107.75	1	107.75	107.75
	46.77	3	140.31	47.375	3	142.125	142.125
	11.56	3	34.68	11.00	3	33.00	33.00
			280.08			282.875	

Correction = $\frac{\text{Difference between sums of products}}{18} \left(\frac{75-S}{2L} \right) = \frac{5.85 - (.75 - .0408)}{18} \left(\frac{.75 - .0408}{.7092} \right) = \mathbf{.04}$
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 Flush Deck (if required)	80.662
Addition for Winter and Winter North Atlantic Freeboard.	Displacement in salt water at summer load water line	Correction for coefficient $\frac{75465.68}{1.76} \div \frac{1.4346}{1.36}$	85.08
Depth to Freeboard Deck = 36'-8 3/4"	$\Delta = \mathbf{13.280}$	Depth Correction ... 25.57	
Summer freeboard = 10.667	Tons per inch immersion at summer load water line	Deduction for superstructures ... -1.72	
Moulded draught (d) = 26.221	$T = \mathbf{47.51}$	Sheer correction04	
Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = 6.555 = 6 1/2"	Deduction = $\frac{\Delta}{40T}$ inches = 6.988	Round of Beam correction ... -13	
Addition for Winter North Atlantic Freeboard (if required) = ✓	7"	Correction for Thickness of Deck amidships ... -	
		Other corrections, scantlings, etc. ... 19.24	
		44.81	1.89
		Summer Freeboard = 128.00	

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

Tropical Fresh Water Line above Centre of Disc ...	13 1/2"
Fresh Water Line „ „ ...	7"
Tropical Line „ „ ...	6 1/2"
Winter Line below „ „ ...	6 1/2"
Winter North Atlantic Line „ „ ...	✓

Tropical Fresh Water Freeboard ...	9'-6 1/2"
Fresh Water „ „ ...	10'-1"
Tropical „ „ ...	10'-1 1/2"
Winter „ „ ...	11'-2 1/2"
Winter North Atlantic „ „ ...	✓