

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

OCT 14 1940

Ship's Name ARAY BANK	Official Number 168501	Nationality and Port of Registry British Belfast.	Gross Tonnage 7258	Date of Build 1940-10	Port of Survey Belfast
Moulded Dimensions: Length 425.56' Breadth 57' Depth 38.66' (38'-7¹⁵/₁₆) (425' to after side of post, 6 ³ / ₄ " to centre of keel stock)					Date of Survey White building
Moulded displacement at moulded draught = 85 per cent. of moulded depth 17,265 tons					Surveyor's Signature L.R. Regar
Coefficient of fineness for use with Tables .758					Particulars of Classification + 100 A 1 With Freeboard (contemplated)

Depth for Freeboard (D). Moulded depth ... 38.66 Ringing plate05 Weathering on exposed deck $T \left(\frac{L-S}{L} \right) =$ ✓ Depth for Freeboard (D) = 38.71	Depth correction. (a) Where D is greater than Table depth (D - Table depth) R = (38.71 - 28.37) × 3 = + 31.02 10.34 (b) Where D is less than Table depth (if allowed) (Table depth - D) R = ✓ If restricted by superstructures ✓	Round of Beam correction. Moulded Breadth (B) 57' Standard Round of Beam = $\frac{B \times 12}{50} =$ 13.68 Ship's Round of Beam = 12.6 Difference 1.08 Restricted to 1.08 × .9136 = Correction = $\frac{\text{Diff}}{4} \times \left(1 - \frac{S_1}{L} \right) =$ +.25
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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 ...	✓				
Forecastle enclosed ...	36.75	36.75	7.5	-	36.75
" overhang ...	none				
Trunk aft ...	✓				
" forward ...	✓				
Tonnage opening aft ...	✓				
" " forward ...	✓				
Total ...	36.75	36.75			36.75

Standard Height of Superstructure **7.5**
 " " R.Q.D. **✓**
 Deduction for complete superstructure **42**
 Percentage covered $\frac{S}{L} =$
 $\frac{S_1}{L} =$ **8.64**
 $\frac{E}{L} =$
 Percentage from Table, Line A. **4.32**
 (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 × .0432 = - 1.81**

SHEER CORRECTION.

Station	Standard Ordinate	S M	Product	Actual Ordinate	Effective Ordinate	S M	Product
P. ...	52.56	1	52.56	57.9	57.9	1	57.9
L from A.P. ...	23.385	4	93.54	25.6	25.6	4	102.4
" " ...	5.78	2	11.56	6.6	6.6	2	13.2
midships ...	-	4	-	-	-	4	-
L from F.P. ...	11.56	2	23.12	12.1	12.1	2	24.2
L " ...	46.77	4	187.08	47	47.0	4	188.0
P. ...	105.11	1	105.11	107.3	107.3	1	107.3
Total ...			472.97				489.0

Mean actual sheer aft = **✓**
 Mean standard sheer aft = **✓**
 Mean actual sheer forward = **✓**
 Mean standard sheer forward = **✓**
 Length of enclosed superstructure forward of amidships = **✓**
 " " aft of " = **✓**

Correction = $\frac{\text{Difference between sums of products}}{18} \left(\frac{.75 - S}{2L} \right) =$ **20.03 / 18 × (.75 - .0432 / .7068) = - .63.786**
 If limited on account of midship superstructure. **Nil.** 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.

Et.
 Depth to Freeboard Deck = **38.71**
 Summer freeboard = **11.96**
 Moulded draught (d) = **26.75**

Deduction for Fresh Water.
 Displacement in salt water at summer load water line
 $\Delta =$ **13640**
 Tons per inch immersion at summer load water line
 $T =$ **49.01**

Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{\Delta}{4}$ inches = **6.69 = 6³/₄**
 Addition for Winter North Atlantic Freeboard (if required) = **✓**

Deduction = $\frac{\Delta}{40T}$ inches = **6.96 = 7**
 27' draft Δ 13690 tons
 26' do. Δ 13105 tons

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient	$\frac{.758 + .68}{1.36} = \frac{1.438}{1.36}$	84.99
Depth Correction	31.02	1.81
Deduction for superstructures	-	82.18
Sheer correction	-	14.10
Round of Beam correction	-	29.05
Correction for Thickness of Deck amidships	-	60.32
Other corrections, scantlings, summer water, draught of 26'-9"	-	1.81
Summer Freeboard	143.50	+ 58.51

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

Tropical Fresh Water Line above Centre of Disc	13³/₄
Fresh Water Line	7
Tropical Line	6³/₄
Winter Line below	6³/₄
Winter North Atlantic Line	✓

Tropical Fresh Water Freeboard	11'-11¹/₂
Fresh Water	10'-9³/₄
Tropical	11'-4¹/₂
Winter	11'-4³/₄
Winter North Atlantic	12'-6¹/₄

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A new form should be prepared if any alterations to 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. —

Names of sister ships. *Shirebank* *Same Builders* 1035.

Builder's name and yard number. *Harland & Wolff Ltd.* 1034

Owners. *Andrew Weir & Co. Ltd.*

Fee £ —



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Foundation