

# Lloyd's Register of Shipping.

## SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

F.B. 191

Ship's Name <b>ACCRA</b>	Official Number	Nationality and Port of Registry <b>BRITISH LIVERPOOL</b>	Gross Tonnage <b>11599.81</b>	Date of Build <b>1947</b>	Port of Survey <b>BARROW</b>
Moulded Dimensions: Length <b>446'-3"</b> Breadth <b>66'</b> Depth <b>36'-6"</b> (CR. OF RUDDER STOCK)					Date of Survey <b>WHILE BUILDING</b>
Moulded displacement at moulded draught = 85 per cent. of moulded depth <b>18130</b> tons					Surveyor's Signature <b>H.P. Urrwin</b>
Coefficient of fineness for use with Tables <b>.694</b>					Particulars of Classification <b>100 A.1 WITH FREEBOARD (CONTEMPLATED)</b>

<b>DEPTH FOR FREEBOARD (D).</b> Moulded depth ... .. <b>36.50</b> Stringer plate <b>.45</b> ... .. <b>.04</b> Sheathing on exposed deck $T \left( \frac{L-S}{L} \right) = \frac{.23 \times 76}{446.25} = .04$ Depth for Freeboard (D) = <b>36.58</b>	<b>DEPTH CORRECTION.</b> (a) Where D is greater than Table depth (D-Table depth) R = $(36.58 - 29.75) 3 = +20.49$ (b) Where D is less than Table depth (if allowed) (Table depth-D) R = If restricted by superstructures	<b>ROUND OF BEAM CORRECTION.</b> Moulded Breadth (B) <b>66.00</b> Standard Round of Beam = $\frac{B \times 12}{50} = \frac{66 \times 12}{50} = 15.84$ Ship's Round of Beam = <b>6</b> Difference <b>9.84 DEFICIENT</b> Restricted to Correction = $\frac{\text{Diff}^e}{4} \times \left( 1 - \frac{S_1}{L} \right) = \frac{9.84}{4} \times .205 = 1.50$
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## DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S <sub>1</sub> )	Height	Height Correction	Effective Length (E)
Poop enclosed <b>OPEN</b> ...	26.00	13.00	8'-5½"	✓	13.00
„ overhang ...					
R.Q.D. enclosed ...					
„ overhang ...					
Bridge enclosed <b>EQUIV.</b> ...	311.78	311.78	8'-5½"	✓	311.78
„ overhang aft ...	5.63	4.22			4.22
„ overhang forward ...	2.09	1.04			1.04
F'cle enclosed <b>EQUIV.</b> ...	22.37	22.37	8'-5½"	✓	22.37
„ overhang ...	2.38	2.38			2.38
Trunk aft ...					
„ forward ...					
Tonnage opening aft ...					
„ „ forward...					
Total ...	370.25	354.79			354.79

Standard Height of Superstructure **7.5**  
 „ „ R.Q.D. **✓**  
 Deduction for complete superstructure **42.00**  
 Percentage covered  $\frac{S}{L} = 82.97\%$   
 „ „  $\frac{S_1}{L} = 79.50\%$   
 „ „  $\frac{E}{L} = 79.50\%$   
 Percentage from Table, Line A.  
 (corrected for absence of forecastle (if required)) ✓  
 Percentage from Table, Line B. **74.68%**  
 (corrected for absence of forecastle (if required))  
 Interpolation for bridge less than .2L (if required) -  
 Deduction =  $42.00 \times .7468 = -31.37$

## SHEER CORRECTION.

Station	Standard Ordinate	S M	Product	Actual Ordinate	Effective Ordinate	S M	Product
A.P. ...	54.625	1	54.625	65.00	65.00	1	65.00
¼L from A.P. ...	24.31	4	97.24	27.81	27.81	4	111.24
¾L „ ...	6.01	2	12.02	6.81	6.81	2	13.62
Amidships ...	0	4	0	0	0	4	0
¾L from F.P. ...	12.02	2	24.04	23.94	23.94	2	47.88
¼L „ ...	48.62	4	194.48	65.56	65.56	4	262.24
F.P. ...	109.25	1	109.25	125.69	125.69	1	125.69
Total ...			491.65				625.67

Mean actual sheer aft = **excess**  
 Mean standard sheer aft

Mean actual sheer forward = **excess**  
 Mean standard sheer forward

Length of enclosed superstructure forward of amidships = **> .1L**

„ „ aft of „ = **> .1L**

Correction =  $\frac{\text{Difference between sums of products}}{18} \left( .75 - \frac{S}{2L} \right) = \frac{134.02}{18} \times (.75 - .4148) = -2.50$   
 If limited on account of midship superstructure.

If limited to maximum allowance of 1½ ins. per 100 ft. ✓

<b>Deduction for Tropical Freeboard.</b> <b>Addition for Winter and Winter North Atlantic Freeboard.</b> Depth to Freeboard Deck = <b>36.54</b> Summer freeboard = <b>11.19</b> Moulded draught (d) = <b>25.35</b> Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = <b>6.34</b> Addition for Winter North Atlantic Freeboard (if required) =	<b>Deduction for Fresh Water.</b> Displacement in salt water at summer load water line $\Delta = 14350$ Tons per inch immersion at summer load water line $T = 56.88$ Deduction = $\frac{\Delta}{40 T}$ inches = <b>6¼"</b>	<b>TABULAR FREEBOARD</b> corrected for Flush Deck (if required) Correction for coefficient $\frac{.694 + .68}{1.36} = \frac{1.374}{1.36}$ <table border="1"> <tr> <th></th><th>+</th><th>-</th></tr> <tr> <td>Depth Correction</td><td>20.49</td><td></td></tr> <tr> <td>Deduction for superstructures</td><td></td><td>31.37</td></tr> <tr> <td>Sheer correction</td><td></td><td>2.50</td></tr> <tr> <td>Round of Beam correction</td><td>.50</td><td></td></tr> <tr> <td>Correction for Thickness of Deck amidships</td><td></td><td>.48</td></tr> <tr> <td>Other corrections, scantlings, etc.</td><td>60.79</td><td></td></tr> <tr> <td><b>Summer Freeboard</b></td><td><b>81.78</b></td><td><b>34.35</b></td></tr> <tr> <td><b>Summer Freeboard</b></td><td colspan="2"><b>= 47.43</b></td></tr> </table>		+	-	Depth Correction	20.49		Deduction for superstructures		31.37	Sheer correction		2.50	Round of Beam correction	.50		Correction for Thickness of Deck amidships		.48	Other corrections, scantlings, etc.	60.79		<b>Summer Freeboard</b>	<b>81.78</b>	<b>34.35</b>	<b>Summer Freeboard</b>	<b>= 47.43</b>	
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## SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, Wood, Steel, Deck :-

Tropical Fresh Water Line above Centre of Disc	12½"
Fresh Water Line	6¼"
Tropical Line	6¼"
Winter Line below	6¼"
Winter North Atlantic Line	✓

Tropical Fresh Water Freeboard	10' 2¼"
Fresh Water	10' 1¾"
Tropical	10' 8"
Winter	11' 8½"
Winter North Atlantic	✓

SUMMER LOAD DRAUGHT = **25'-6"** EXTREME  
 " " " = **25'-4¼"** MOULDED.

KEEL & DOUBLING = **1.81**

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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.

F'CLE L = 23.50  
LESS  $\frac{7.5 \times 4}{26.5} = \frac{1.13}{22.37}$  EQUIV.

O.H. = 1.13  
 $\frac{1.25}{2.38}$  @ 100%

$\frac{4}{10} = 44.625$

BRIDGE L = 317.25 ✓

FORE END LESS  $\frac{12.5 \times 3.5}{52} = -.84$  ✓

O.H. FORD =  $\frac{.84}{2.09}$  ✓

AFT END LESS  $67.5 \times 4 = 270.0$   
+  $3.5 \times 2.25 = 7.87$   
 $277.87 \div 60 = -4.63$  ✓

O.H. AFT =  $\frac{4.63}{5.63}$  ✓

EQUIV LEN =  $\frac{317.25}{5.47}$   
311.78 ✓

Trade of ship .....

Names of sister ships .....

Builder's name and yard number .....

Owners .....

Fee £ .....



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