

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

Index No. 36159
(For London Office only).

19977

Ship's Name <i>s/s "Crown Arun"</i> <i>ex "Hannah Boge"</i>	Official Number <i>167367</i>	Nationality and Port of Registry <i>British</i> <i>London</i>	Gross Tonnage <i>2372</i>	Date of Build	Port of Survey <i>Leith</i>
Moulded Dimensions: Length <i>287.1'</i> Breadth <i>44.95'</i> Depth <i>19.68'</i>					Date of Survey <i>16 December 1939</i>
Moulded displacement at moulded draught = 85 per cent. of moulded depth <i>4714</i> tons					Surveyor's Signature <i>John Houston</i>
Coefficient of fineness for use with Tables <i>.7643</i>					Particulars of Classification <i>100 A -</i>

Depth for Freeboard (D). Moulded depth <i>19.68</i> Stringer plate <i>.03</i> Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$ Depth for Freeboard (D) = <i>19.71</i>	Depth correction. (a) Where D is greater than Table depth (D - Table depth) R = $(19.71 - 19.14) \times 2.208 = +1.26$ (b) Where D is less than Table depth (if allowed) (Table depth - D) R = <input checked="" type="checkbox"/> If restricted by superstructures <input checked="" type="checkbox"/>	Round of Beam correction. Moulded Breadth (B) <i>44.95</i> Standard Round of Beam = $\frac{B \times 12}{50} =$ <i>10.79</i> Ship's Round of Beam = <i>10.8"</i> Difference <i>.01</i> Restricted to <input checked="" type="checkbox"/> Correction = $\frac{\text{Diff}^a}{4} \times \left(1 - \frac{S_1}{L} \right) =$ $\frac{.01}{4} \times .1676$ <i>Negligible</i>
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DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)	
Poop enclosed ...	<i>22.1'</i>	<i>22.10</i>	<i>7.5'</i>	-	<i>22.10</i>	Standard Height of Superstructure <i>6.37</i>
„ overhang ...						„ „ R.Q.D. <i>4.49</i>
R.Q.D. enclosed ...	<i>94.5'</i>	<i>94.50</i>	<i>4.25'</i>	$\times \frac{4.27}{4.49}$	<i>89.87</i>	Deduction for complete superstructure <i>34.47</i>
„ overhang ...						Percentage covered $\frac{S}{L} =$ <i>87.06</i>
Bridge enclosed ...	<i>109.3'</i>	<i>98.37</i>	<i>7.5'</i>	-	<i>98.37</i>	„ „ $\frac{S_1}{L} =$ <i>83.24</i>
„ overhang aft ...						„ „ $\frac{E}{L} =$ <i>81.63</i>
„ overhang forward ...						Percentage from Table, Line A. <i>77.32</i>
F'cle enclosed <i>Synthetic</i> ...	<i>24.02</i>	<i>24.02</i>	<i>7.5'</i>	-	<i>24.02</i>	(corrected for absence of forecastle (if required))
„ overhang ...						Percentage from Table, Line B. <input checked="" type="checkbox"/>
Trunk aft ...						(corrected for absence of forecastle (if required))
„ forward ...						Interpolation for bridge less than 2L (if required) -
Tonnage opening aft ...						Deduction = $34.47 \times .7732 =$ <i>-26.65</i>
„ forward ...	<i>249.92</i>					
Total ...	<i>250.1</i>	<i>238.99</i>			<i>234.36</i>	

SHEER CORRECTION.

Station	Standard Ordinate	S M	Product	Actual Ordinate	Effective Ordinate	S M	Product
A.P. ...	<i>38.71</i>	1	<i>38.71</i>	<i>39.00</i>	<i>39.00</i>	1	<i>39.00</i>
$\frac{1}{4}$ L from A.P. ...	<i>17.23</i>	4	<i>68.92</i>	<i>18.00</i>	<i>18.00</i>	4	<i>72.00</i>
$\frac{2}{4}$ L „ ...	<i>4.26</i>	2	<i>8.52</i>	<i>4.75</i>	<i>4.75</i>	2	<i>9.50</i>
Amidships ...	-	4	-	-	-	4	-
$\frac{3}{4}$ L from F.P. ...	<i>8.52</i>	2	<i>17.04</i>	<i>9.50</i>	<i>9.50</i>	2	<i>19.00</i>
$\frac{1}{4}$ L „ ...	<i>34.45</i>	4	<i>137.80</i>	<i>33.75</i>	<i>33.75</i>	4	<i>135.00</i>
F.P. ...	<i>77.42</i>	1	<i>77.42</i>	<i>78.50</i>	<i>78.50</i>	1	<i>78.50</i>
Total ...			<i>348.41</i>	<i>183.50</i>			<i>353.00</i>

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{4.59}{18} (.75 - .4353) = -.08$
 If limited on account of midship superstructure. ☒ *.3147* If limited to maximum allowance of $1\frac{1}{2}$ ins. per 100 ft. ☒

Mean actual sheer aft = *Even*
Mean standard sheer aftMean actual sheer forward = *Even*
Mean standard sheer forwardLength of enclosed superstructure forward of amidships = *.29*aft of „ = *.50*

RETAIN

Deduction for Tropical Freeboard.
Addition for Winter and Winter North Atlantic Freeboard.

Depth to Freeboard Deck = *19.71*
 Summer freeboard = *1.44*
 Moulded draught (d) = *18.27*

Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = *4.57 = 4\frac{1}{2}*
 Addition for Winter North Atlantic Freeboard (if required) = *6\frac{1}{2}*

Deduction for Fresh Water.

Displacement in salt water at summer load water line

 $\Delta =$ *5285*

Tons per inch immersion at summer load water line

 $T =$ *26.85*Deduction = $\frac{\Delta}{40T}$ inches $=$ *4.92* $=$ *5*

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient $\frac{.764 + .68}{1.36} = \frac{1.444}{1.36}$ Depth Correction *1.26*Deduction for superstructures *-26.65*Sheer correction *.08*Round of Beam correction *-*Correction for Thickness of Deck amidships *-*Other corrections, scantlings, etc. *-**1.26 26.73 -25.47*Summer Freeboard = *17.35*SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, ~~Water~~, Steel, Deck:-

Tropical Fresh Water Line above Centre of Disc ...	<i>9\frac{1}{2}</i>
Fresh Water Line „ „ ...	<i>5</i>
Tropical Line „ „ ...	<i>4\frac{1}{2}</i>
Winter Line below „ „ ...	<i>4\frac{1}{2}</i>
Winter North Atlantic Line „ „ ...	<i>6\frac{1}{2}</i>

Tropical Fresh Water Freeboard ...	<i>1'-5\frac{1}{4}"</i>
Fresh Water „ „ ...	<i>0'-7\frac{3}{4}"</i>
Tropical „ „ ...	<i>1'-0\frac{1}{2}"</i>
Winter „ „ ...	<i>1'-0\frac{3}{4}"</i>
Winter North Atlantic „ „ ...	<i>1'-9\frac{3}{4}"</i>
Winter North Atlantic „ „ ...	<i>1'-11\frac{3}{4}"</i>

Crown Arm.

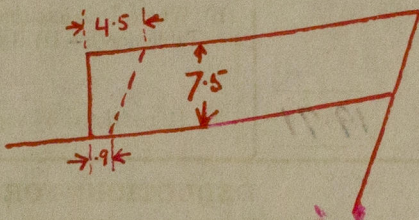
A new form should be prepared if any alterations that affect the freeboard have been made. If no such alterations have been made, the Surveyor should endorse the form on this side with his signature and the date.

1st December 1937
John Houston
- A 001

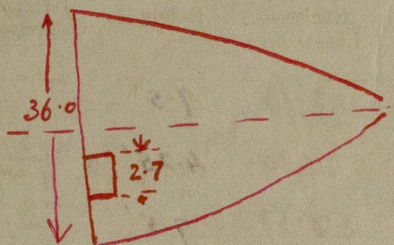
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Forecastle Equis $\frac{2.7 \times 2.7 \times 7.5}{36.0 \times 7.5} = .2$



Standard height of forecastle = 6.37
length runs at standard height
 $= .9 + \frac{(4.5 - .9) \times 6.37}{7.5} = .9 + 3.06 = 3.96$



Reduction for runs = $\frac{3.96 + .9 \times 2.7 \times 6.37}{2 \times 36.0 \times 6.37}$
 $= \frac{4.86 \times 2.7}{2 \times 36} = .18$

\therefore equivalent length of forecastle = 24.02

SHEET CORRECTION

183.20	183.20
28.20	28.20
33.72	33.72
9.20	9.20
4.72	4.72
18.00	18.00
34.00	34.00

Trade of ship

Names of sister ships

Builder's name and yard number

Owners

Fee £



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Foundation