

# Lloyd's Register of Shipping.

## SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

Ship's Name <b>BURNSIDE</b>	Official Number ✓	Nationality and Port of Registry <b>British Sunderland Glasgow</b>	Gross Tonnage <del>5650</del> <b>5659</b>	Date of Build <b>1940</b>	Port of Survey <b>Glasgow</b>
Moulded Dimensions: Length <b>420.58'</b> Breadth <b>57.0'</b> Depth <b>28.5'</b> <i>To centre of rudder stock</i>					Date of Survey <b>July 1940</b>
Moulded displacement at moulded draught = 85 per cent. of moulded depth <b>12353</b> ✓ tons (S.W.)					Surveyor's Signature <b>T.R. McIlwanna</b>
Coefficient of fineness for use with Tables <b>.745</b> ✓					Particulars of Classification <b>+100 A.1 with Freeboard. (Contemplated)</b>

Depth for Freeboard (D).	Depth correction.	Round of Beam correction.
Moulded depth ... <b>28.5'</b>	(a) Where D is greater than Table depth (D - Table depth) R = $(28.54 - 28.04) \times 3 = +1.50''$	Moulded Breadth (B) <b>57.0'</b>
Stringer plate ( $\frac{1}{4} \times 5''$ ) ... <b>.04</b>	(b) Where D is less than Table depth (if allowed) (Table depth - D) R = ✓	Standard Round of Beam = $\frac{B \times 12}{50} = 13.68$
Sheathing on exposed deck $T \left( \frac{L-S}{L} \right) =$ ✓	If restricted by superstructures ✓	Ship's Round of Beam = <b>14''</b>
Depth for Freeboard (D) = <b>28.54</b>		Difference <b>Excess</b> <b>.32</b>
		Restricted to Correction = $\frac{\text{Diff}^2}{4} \times \left( 1 - \frac{S_1}{L} \right) = \frac{.32^2}{4} \times .0062 = \text{Nil}$

## DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S <sub>1</sub> )	Height	Height Correction	Effective Length (E)
Poop enclosed ...	<b>46-7½</b>	<b>46.62</b>	<b>10'-0"</b>		<b>46.62</b>
" overhang ...					
R.Q.D. enclosed ...					
" overhang ...					
Bridge enclosed ...					
" overhang aft ...					
" overhang forward ...	<b>368-9"</b>	<b>368.75</b>	<b>10'-0"</b>		<b>368.75</b>
" overhang forward ...			<b>14'-0"</b>		
Trunk aft ...					
" forward ...					
Tonnage opening aft ...	<b>5-2½</b>	<b>Diff. x ½</b> <b>2.60</b>			<b>2.60</b>
" forward ...					
Total ...	<b>420.58</b>	<b>417.97</b>			<b>417.97</b>

Standard Height of Superstructure **7.5'**  
" " R.Q.D. ✓  
Deduction for complete superstructure **42.00"**  
Percentage covered  $\frac{S}{L} = 100.00$   
" "  $\frac{S_1}{L} = 99.38$   
" "  $\frac{E}{L} = 99.38$   
Percentage from Table, Line A. **99.24**  
(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 x .9924 = -41.68"**

## SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. <i>CL Rudder Stock</i>	<b>52.06</b>	1		<b>52.06</b>	<b>45.58</b>	<b>76.38</b>	1		<b>76.38</b>
¼L from A.P. ...	<b>23.17</b>	4		<b>92.68</b>	<b>19.18</b>	<b>33.99</b>	4		<b>135.96</b>
¾L " ...	<b>5.73</b>	2		<b>11.46</b>	<b>5.78</b>	<b>8.40</b>	2		<b>16.80</b>
Amidships ...		4			<b>0</b>		4		
¾L from F.P. ...	<b>11.45</b>	2		<b>22.90</b>	<b>10.13</b>	<b>19.03</b>	2		<b>38.06</b>
¼L " ...	<b>46.33</b>	4		<b>185.32</b>	<b>90.96</b>	<b>77.00</b>	4		<b>308.00</b>
F.P. ...	<b>104.12</b>	1		<b>104.12</b>	<b>142.14</b>	<b>173</b>	1		<b>173.00</b>
Total ...				<b>468.54</b>	<b>+30¾</b>				<b>748.20</b>

Mean actual sheer aft = **Excess**  
Mean standard sheer aft = **Excess**  
Mean actual sheer forward = **Excess**  
Mean standard sheer forward = **Excess**  
Length of enclosed superstructure forward of amidships = **0**  
" " aft of " = **0**  
Correction =  $\frac{\text{Difference between sums of products}}{18} \left( .75 - \frac{S}{2L} \right) = \frac{179.66}{18} \times .15 = -3.88''$   
If limited on account of midship superstructure. If limited to maximum allowance of 1½ ins. per 100 ft.

Deduction for Tropical Freeboard.	Deduction for Fresh Water.	TABULAR FREEBOARD corrected for Flush Deck (if required)
Addition for Winter and Winter North Atlantic Freeboard.	Displacement in salt water at summer load water line	Correction for coefficient
Depth to Freeboard Deck = <b>28.54</b>	Δ = <b>13.096</b>	<b>.68 + .745 = 1.425 / 1.36</b>
Summer freeboard = <b>3.14</b>	Tons per inch immersion at summer load water line	
Moulded draught (d) = <b>25.40</b>	T = <b>48.18</b>	
Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = <b>6.35 = 6¼"</b>	Deduction = $\frac{\Delta}{40T}$ inches = <b>6.80</b>	
Addition for Winter North Atlantic Freeboard (if required) = ✓	= <b>6¾"</b>	

	+	-
Depth Correction	<b>1.50</b>	
Deduction for superstructures		<b>41.68</b>
Sheer correction		<b>3.88</b>
Round of Beam correction		
Correction for Thickness of Deck amidships		
Other corrections, scantlings, etc.		
	<b>1.50</b>	<b>45.56</b>
Summer Freeboard =		<b>37.64</b>

**77.98**  
**81.70**

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

19 JUL 1940	Tropical Fresh Water Line above Centre of Disc ...	13"	Tropical Fresh Water Freeboard ...	2'-0¾"
	Fresh Water Line " " ...	6¾"	Fresh Water " " ...	2'-7"
	Tropical Line " " ...	6¼"	Tropical " " ...	2'-7½"
	Winter Line below " " ...	6¼"	Winter " " ...	3'-8"
	Winter North Atlantic Line " " ...	✓	Winter North Atlantic " " ...	



Burnside.

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.

Excess Tween Deck Height =  $10'-0\frac{3}{4}" - 7'-6" = 30\frac{3}{4}"$   
Shear at break =  $35.56"$  Virtual =  $35.56 + 30.75 = 66.31"$   
Shear at FP =  $66.31 \times \left( \frac{210.29}{127.65} \right)^2 = 179.94"$

Actual Shear at F.P. =  $21'-11" - 7'-6" = 173"$

$\therefore$  allow 173"

Trade of ship

International

Names of sister ships

Builder's name and yard number

Barclay Curle & Co Ltd

Yard No 676.

Owners

Burns Philp & Co Ltd

Fee £

16.0.0



© 2020

Lloyd's Register  
Foundation