

11 APR 1932

Index. No. 25037  
(For London Office only.)

Rpt. C.11.

Lloyd's Register of Shipping.  
SURVEYS FOR FREEBOARD.

GLASGOW REPORT No. 52307

Computation of Freeboard for Steamer, Sailing Ship, Tanker				Port of Survey <u>Glasgow</u>	
having <u>Loop, Bridge and Forecastle</u>				Date of Survey <u>6th April 1932</u>	
(Type of Superstructures.)				Name of Surveyor <u>James R. Clark</u>	
Ship's Name	Nationality and Port of Registry	Official Number	Gross Tonnage	Date of Build	
<u>LAIRD'S MOOR</u>	<u>British Glasgow</u>	<u>143,335</u>	<u>1578</u>	<u>1919</u>	
Moulded Dimensions: Length <u>265</u>		Breadth <u>35' 9 1/2" 36</u>	Depth <u>16' 8"</u>	Particulars of Classification <u>100 A1</u>	
Moulded displacement at moulded draught = 85 per cent. of moulded depth <u>2426</u> tons					
Coefficient of fineness for use with Tables <u>.628</u>					

Depth for Freeboard (D)		Depth correction		Round of Beam correction	
Moulded depth ... ..	<u>16.67</u>	(a) Where D is greater than Table depth (D-Table depth) R = <u>(16.76 - 17.67) 2.038</u>		Moulded Breadth (B)	<u>35' 9 1/2" 36</u>
Stringer plate <u>NOT AVAILABLE</u>	<u>.04</u>	(b) Where D is less than Table depth (if allowed) (Table depth-D) R =		Standard Round of Beam = $\frac{B \times 12}{50}$	<u>8.64</u>
Sheathing on exposed deck				Ship's Round of Beam	<u>9"</u>
$T \left( \frac{L-S}{L} \right) = .32 (1404)$	<u>.05</u>	If restricted by superstructures	<u>-</u>	Difference	<u>.36</u>
Depth for Freeboard (D) =	<u>16.76</u>			Restricted to	
				Correction = $\frac{\text{Diff}}{4} \times \left( 1 - \frac{S_1}{L} \right)$	<u><math>\frac{.36}{4} (.4135) = -.04</math></u>

## DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S <sub>1</sub> )	Height	Height Correction	Effective Length (E)	
Poop enclosed ... ..	<u>50' 4"</u>	<u>50.33</u>	<u>7.5H</u>		<u>50.33</u>	Standard Height of Superstructure <u>6.15</u>
" overhang ... ..	<u>33</u>					" " R.Q.D. <u>-</u>
R.Q.D. enclosed ... ..	<u>-</u>					Deduction for complete superstructure <u>32.5</u>
" overhang ... ..	<u>-</u>					Percentage covered $\frac{S}{L} = .8596$
Bridge enclosed <u>OPEN</u> ...	<u>126' 6"</u>	<u>63.25</u>	<u>7.5H</u>		<u>63.25</u>	" " $\frac{S_1}{L} = .5865$
" overhang aft ... ..	<u>50</u>					" " $\frac{E}{L} = .5865$
" overhang forward ... ..	<u>32.79</u>	<u>32.79</u>			<u>32.79</u>	Percentage from Table, Line A. <u>-</u>
Forecastle enclosed ... ..	<u>36' 3"</u>	<u>1.73</u>	<u>7.5H</u>		<u>1.73</u>	(corrected for absence of forecastle (if required)) <u>-</u>
" overhang ... ..	<u>3.46</u>					Percentage from Table, Line B. <u>4465</u>
Trunk aft ... ..						(corrected for absence of forecastle (if required)) <u>-</u>
Bridge forward ... ..	<u>14.75</u>	<u>7.37</u>			<u>7.37</u>	Interpolation for bridge less than 2L (if required) <u>-</u>
Tonnage opening aft ... ..						Deduction = <u>32.5 + 4465 = -14.51</u>
" " forward ... ..						
Total ... ..	<u>213' 1"</u>	<u>155.47</u>			<u>155.47</u>	
	<u>227.83</u>					

## SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product	
A.P. ... ..	<u>36.50</u>	1		<u>36.50</u>	<u>19.38</u>	<u>19.38</u>	1		<u>19.38</u>	Mean actual sheer aft = <u>Determine</u>
L from A.P. ... ..	<u>16.24</u>	4		<u>64.96</u>	<u>6.71</u>	<u>6.71</u>	4		<u>26.84</u>	Mean actual sheer forward = <u>Determine</u>
L " ... ..	<u>1.02</u>	2		<u>2.04</u>	<u>1.67</u>	<u>1.67</u>	2		<u>3.34</u>	Mean standard sheer forward
midships ... ..		4					4			Length of enclosed superstructure forward of amidships =
L from F.P. ... ..	<u>8.03</u>	2		<u>16.06</u>	<u>6.71</u>	<u>6.71</u>	2		<u>13.42</u>	" " aft of " =
L " ... ..	<u>32.48</u>	4		<u>129.92</u>	<u>26.86</u>	<u>26.86</u>	4		<u>107.44</u>	
P. ... ..	<u>73.00</u>	1		<u>73.00</u>	<u>56.38</u>	<u>56.38</u>	1		<u>56.38</u>	
Total ... ..				<u>328.48</u>					<u>226.80</u>	

Correction =  $\frac{\text{Difference between sums of products}}{18} \left( .75 - \frac{S}{2L} \right) = \frac{101.68}{18} (.75 - .4298) = +1.81$

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 Fresh Deck (if required)	<u>35.45</u>
Addition for Winter and Winter North Atlantic Freeboard.	Displacement in salt water at summer load water line	Correction for coefficient	<u>35.45</u>
Depth to Freeboard Deck = <u>16.76</u>	$\Delta =$	Depth Correction ... ..	<u>-</u>
Summer freeboard = <u>1.67</u>	Tons per inch immersion at summer load water line	Deduction for superstructures ... ..	<u>14.51</u>
Moulded draught (d) = <u>14.89</u>	T =	Sheer correction ... ..	<u>1.81</u>
Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = <u>3.72</u>	Deduction = $\frac{\Delta}{40T}$ inches =	Round of Beam correction ... ..	<u>.04</u>
Addition for Winter North Atlantic Freeboard (if required) =		Correction for Thickness of Deck amidships ... ..	<u>1.40</u>
		Other corrections, scantlings, etc. ... ..	<u>-</u>
			<u>3.21</u>
			<u>14.55</u>
			<u>11.34</u>
			Summer Freeboard = <u>24.11</u>

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

Tropical Fresh Water Line above Centre of Disc ... ..	Tropical Fresh Water Freeboard ... ..
Fresh Water Line " " ... ..	Fresh Water " " ... ..
Tropical Line " " ... ..	Tropical " " ... ..
Winter Line below " " ... ..	Winter " " ... ..
Winter North Atlantic Line " " ... ..	Winter North Atlantic " " ... ..

W505-0226(112)

Freeboards assigned under 1906 regulation.



HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS											
Description of Hatchway		ON	FBD. DECK	6d. sk. in hoop.	6d. sk. in full.						
Dimensions of Hatchway		1	2	3.							
		5'-9" x 10'	7' 8" x 11'	7' 8" x 12'	2' 2" x 2' 3"	2' x 2' 2"					
COAMINGS	Height above Deck	24"	24"	22 1/2"	flush	18"					
	Thickness	44	44	44	Hatch	30					
	Stiffeners	44	44	44		30					
	Brackets, Stays										
HATCH BEAMS	Number										
	Spacing										
	Scantling and Sketch										
	Bearing Surface										
FORE AND AFTERS	Number	one	three	three							
	Spacing	5'	2-7 1/2'	3'							
	Unsupported Lengths	5-7 1/2'	7-6 1/2'	7-6 1/2'							
	Scantling and Sketch	Gr. F+A as for No. 1 3 x 36 A. Gr. F+A as for No. 2 3 x 36 A. Gr. F+A as for No. 2 3 x 36 A.	Gr. F+A as for No. 1 7-6 x 36 A. 3 x 36 A. Side F+A as for No. 2 3 x 36 A.	Gr. F+A as for No. 1 7-6 x 36 A. 3 x 36 A. Side F+A as for No. 2 3 x 36 A.							
Bearing Surface	3"	3"	3"								
HATCH COVERS	Material	2 1/2" W.P.	2 1/2" W.P.	2 1/2" W.P.	3 1/2" cover	hinged					
	Thickness	2 1/2"	2 1/2"	2 1/2"	flush	with steel					
	How fitted	3"	3"	3"	with	wood sk.					
	Bearing Surface	14 1/2"	14 1/2"	14 1/2"	wood sk.	cover					
Spacing of Cleats		22"	24"	24"							
Number of Tarpaulins		2	2	2							

Particulars of fiddley, funnel and ventilator coamings :—

Particulars of Flush Bunker Scuttles:—

Particulars of Ventilators in exposed positions on freeboard and superstructure decks:—

Particulars of Air Pipes in exposed positions on freeboard, raised quarter, or superstructure decks :—

Particulars of Gangway Cargo and Coaling Ports:—

Particulars of Scuppers and Sanitary Discharge Pipes

Particulars of Side Scuttles :

Particulars of Guard Rails :—

Particulars of Gangways, Lifelines, etc.:—

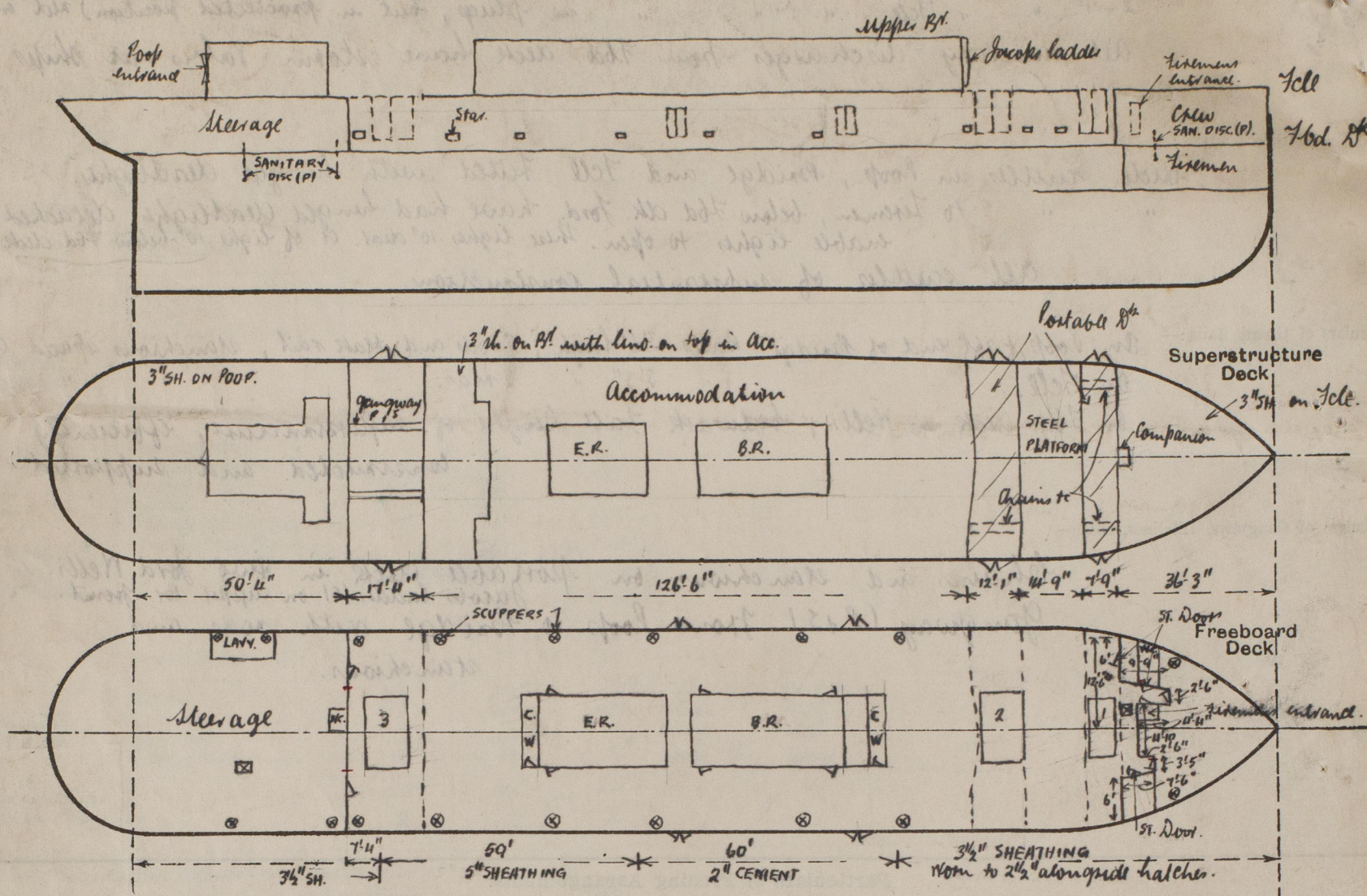
Particulars of Freeing Arrangements.

Particulars of Superstructures, Trunks, Casings, Deckhouses.Particulars of Closing Appliances (state if capable of being manipulated from both sides).

Method of Closing Appliances (See 1. Capacity of Closing Appliances)	
Pop Bulkhead ... ..	Hinged steel doors, operated both sides. ✓
Raised Quarter Deck Bulkhead ... ..	✓
Bridge, After Bulkhead ... ..	✓
Bridge, Forward Bulkhead ... ..	3 Hinged steel doors, and two panelled wood doors, upper panels formed of jalousies, doors operated both sides. ✓
Forecastle Bulkhead ... ..	✓
Exposed Machinery Casings on Free-board or Raised Quarter Decks ... ..	✓
Exposed Machinery Casings on Super-structure Decks ... ..	✓
Machinery Casings within Superstructures not fitted with Class I Closing Appliances ... ..	Doors of steel, permanently attached and capable of being closed and secured both sides. ✓
Deckhouses on Flush Deck Ships ... ..	✓



Superstructure bulkheads, trunks, deckhouses, casings, cargo and coaling hatchways, extent and thickness of sheathing on the freeboard deck, gangway, cargo and coaling ports, and any other openings, etc., which would affect the seaworthiness of the ship are to be shewn on the following sketches:—



Sheathing in wells. 3.9" mean.

State any special features in the construction of the ship:—

Owners desire load line to be assigned on basis of 1906 Regulations.

Usual trade: Glasgow, Dublin and Londonderry.

The following information was obtained from the Builders:

Wld. disp. at 85% mld. depth

2426.

	Ext. A	T.P.1.
14'	2273	17.32
15'	2483	17.6
16'	2699	17.86

File equals bht.

$$\begin{aligned} \text{Run} &= \frac{(9.75 \times 3.29) + (6.5 \times 3.75) + (5.42 \times 4.83)}{25} \\ &= \frac{32.2 + 28.1 + 26.2}{25} = 3.46 \\ &= 30.25 \\ &= 32.79 \end{aligned}$$

Builder's name and yard number

A and J Inglis NO 311.

Names of sister ships

Owners

Burns and Laird Lines Ltd.

Fee £

9 : 7 : 0

Received by me



© 2020

Lloyd's Register Foundation