

13 APR 1932

Rpt. C.11.

24/12/32

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

Index. No. **25043**
(For London Office only.)

Reford No. 19230

Computation of Freeboard for Steamer, ~~Sailing Ship, Tug~~
having Forecastle, Bridge & PoopPort of Survey Swansea

(Type of Superstructures.)

Ship's Name

"Vardulia"

Nationality and Port of Registry

British
Glasgow

Official Number

137835

Gross Tonnage

5691

Date of Build

1917Date of Survey 7th 8th & 11th April 1932Name of Surveyor Hannish McFarlane

Moulded Dimensions: Length 420.47 Breadth 55.68 Depth 31.3 3/4
 Moulded displacement at moulded draught = 85 per cent. of moulded depth 13630 tons
 Coefficient of fineness for use with Tables .766

Particulars of Classification + 100 A1

Depth for Freeboard (D)	Depth correction	Round of Beam correction
Moulded depth <u>31.3 3/4</u>	(a) Where D is greater than Table depth (D - Table depth) R = <u>(31.35 - 28.03) 3.00 = +9.96</u>	Moulded Breadth (B) <u>55.68</u> Standard Round of Beam = $\frac{B \times 12}{50} =$ <u>13.36</u> Ship's Round of Beam = <u>14</u> Difference = <u>.64</u> Restricted to <u>✓</u> Correction = $\frac{\text{Diff}}{4} \times (1 - \frac{S_1}{L}) =$ <u>.64 / 4 (1 - .483) = -.08</u>
Stringer plate <u>1/2</u>	(b) Where D is less than Table depth (if allowed) (Table depth - D) R = <u>✓</u>	
Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$		
Depth for Freeboard (D) = <u>31.35</u>	If restricted by superstructures <u>✓</u>	

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed	<u>37-10</u>	<u>37.83</u>	<u>8'-0"</u>		<u>37.83</u>
" overhang	<u>4"</u>	<u>.17</u>			<u>.17</u>
R.Q.D. enclosed	<u>✓</u>				
" overhang	<u>✓</u>				
Bridge enclosed	<u>123-4</u>	<u>123.33</u>	<u>7'-10"</u>		<u>123.33</u>
" overhang aft	<u>NIL</u>				
" overhang forward	<u>NIL</u>				
Fore enclosed	<u>41-5</u>	<u>41.42</u>	<u>8'-0"</u>		<u>41.42</u>
" overhang	<u>4"</u>	<u>.33</u>			<u>.33</u>
Trunk aft	<u>✓</u>				
" forward	<u>✓</u>				
Tonnage opening aft	<u>✓</u>				
" forward	<u>✓</u>				
Total	<u>203.24</u>	<u>203.08</u>			<u>203.08</u>

Standard Height of Superstructure <u>7.50</u>	
" " R.Q.D. <u>✓</u>	
Deduction for complete superstructure <u>42.00</u>	
Percentage covered $\frac{S}{L} =$ <u>48.34%</u>	
" " $\frac{S_1}{L} =$ <u>48.30%</u>	
" " $\frac{E}{L} =$ <u>48.30%</u>	
Percentage from Table, Line A. <u>✓</u>	
(corrected for absence of forecastle (if required))	
Percentage from Table, Line B. <u>34.55%</u>	
(corrected for absence of forecastle (if required))	
Interpolation for bridge less than 2L (if required) <u>✓</u>	
Deduction = <u>42.00</u> x <u>.3455</u> = <u>-14.51</u>	

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P.	<u>52.05</u>	<u>1</u>		<u>52.05</u>	<u>70.5</u>	<u>69.00</u>	<u>1</u>		<u>69.00</u>
1/4 L from A.P.	<u>23.17</u>	<u>4</u>		<u>92.68</u>	<u>54</u>	<u>29.98</u>	<u>4</u>		<u>119.92</u>
3/4 L "	<u>5.73</u>	<u>2</u>		<u>11.46</u>	<u>72</u>	<u>7.49</u>	<u>2</u>		<u>14.98</u>
Amidships	<u>✓</u>	<u>4</u>		<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>4</u>		<u>✓</u>
3/4 L from F.P.	<u>11.45</u>	<u>2</u>		<u>22.90</u>	<u>26</u>	<u>14.99</u>	<u>2</u>		<u>29.98</u>
1/4 L "	<u>46.33</u>	<u>4</u>		<u>185.32</u>	<u>709</u>	<u>59.95</u>	<u>4</u>		<u>239.80</u>
F.P.	<u>104.10</u>	<u>1</u>		<u>104.10</u>	<u>137</u>	<u>138.00</u>	<u>1</u>		<u>138.00</u>
Total				<u>468.51</u>					<u>611.68</u>

Mean actual sheer aft = Excess
Mean standard sheer aft = ExcessMean actual sheer forward = Excess
Mean standard sheer forward = ExcessLength of enclosed superstructure forward of amidships = .144" " aft of " = .149Correction = $\frac{\text{Difference between sums of products}}{18} \left(\frac{.75 - S}{2L} \right) = \frac{143.17}{18} \left(\frac{.75 - .2417}{1} \right) = -4.04$

If limited on account of midship superstructure.

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.

Depth to Freeboard Deck = 31.35
 Summer freeboard = 6.19
 Moulded draught (d) = 25.16

Deduction for Tropical freeboard and addition for
 Winter freeboard = $\frac{d}{4}$ inches = 6.29 = 6 1/4

Addition for Winter North Atlantic Freeboard (if required) = ✓

Deduction for Fresh Water.

Displacement in salt water at summer load water line

 $\Delta =$ 12860

Tons per inch immersion at summer load water line

 $T =$ 44.9Deduction = $\frac{\Delta}{40T}$ inches $=$ 7.14 = 7 1/4

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient

	+	-
Depth Correction	<u>9.96</u>	<u>-</u>
Deduction for superstructures	<u>-</u>	<u>14.51</u>
Sheer correction	<u>-</u>	<u>4.04</u>
Round of Beam correction	<u>-</u>	<u>.08</u>
Correction for Thickness of Deck amidships	<u>-</u>	<u>-</u>
Other corrections, scantlings, etc.	<u>-</u>	<u>-</u>

Summer Freeboard = 74.20

SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, Weed, Steel, Deck:—

Tropical Fresh Water Line above Centre of Disc

Fresh Water Line " "

Tropical Line " "

Winter Line below " "

Winter North Atlantic Line " "

Tropical Fresh Water Freeboard

Fresh Water " "

Tropical " "

Winter " "

Winter North Atlantic " "

6'-2 1/4"5'-0 3/4"5'-7"5'-8"6'-8 1/2"1906Freeboards assignedLloyd's RegisterFoundation

PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS									
Description of Hatchway	No. 1 Freeboard Deck	No. 2 Freeboard Deck	No. 3 Freeboard Deck	No. 4 Freeboard Deck	No. 5 Freeboard Deck	X Bunker Bulkhead Deck	Side Bunker Bulkhead Deck	Side Bunker Bulkhead Deck	Side Bunker Bulkhead Deck
Dimensions of Hatchway	24'-9" x 18'-0"	30'-0" x 18'-0"	18'-0" x 18'-0"	33'-0" x 18'-0"	24'-0" x 18'-0"	18'-0" x 18'-0"	see below	2'-8" x 2'-10"	2'-8" x 2'-10"
COAMINGS	Height above Deck ... 3'0"	3'0"	1'4"	3'0"	3'0"	3'0"		3'0"	3'0"
Thickness ... 1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"		1/4"	1/4"
Stiffeners ... 1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"		1/4"	1/4"
Brackets, Stays ... NIL	NIL	✓	✓	✓	✓	✓		✓	✓
HATCH BEAMS	Number ... 3	4	2	5	3	2		NIL	NIL
Spacing ... 6'-2"	6'-2"	6'-0"	6'-0"	5'-6"	6'-0"	6'-0"			
Scantling and Sketch	35' x 25' x 35'	32' x 25' x 35'	26' x 20' x 45'	27' x 20' x 35'	31' x 24' x 35'	26' x 20' x 45'			
Bearing Surface	5' x 3' x 45'	5' x 3' x 45'	3 1/2' x 3 1/2' x 50'	3 1/2' x 3 1/2' x 50'	5' x 3' x 45'	3 1/2' x 3 1/2' x 50'			
FORE AND AFTERS	Number ... NIL	✓	✓	✓	✓	✓		✓	✓
Spacing ...									
Unsupported Lengths									
Scantling and Sketch									
Bearing Surface									
HATCH COVERS	Material ... W. Wood	W. Wood	W. Wood	W. Wood	W. Wood	W. Wood		W. Wood	W. Wood
Thickness ... 2"	2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"		2 1/2"	2 1/2"
How fitted ... F+A	F+A	F+A	F+A	F+A	F+A	F+A		F+A	F+A
Bearing Surface ... 3"	3"	3"	3"	3"	3"	3"		3"	3"
Spacing of Cleats ... 20"	20"	21"	23"	20"	20"	23"		14"	23"
Number of Tarpaulins ... 3	3	3	3	3	3	3		2	2

Particulars of fiddle, funnel and ventilator coamings :-

Steel deck, gratings with hinged steel covers /
Main funnel riveted to deck, Engine room /
Skylight steel flaps glass circles, Bunker Hatch 16'-10" x 6'-0" /
9" coaming 2 1/2" Hatch covers 2 1/2" bearing surface Hatches fitted F+A. /
3 Vents P.S. to Stokhold & Engine room

Particulars of Bunker Scuttles :-

Side Bunker Hatches on Freeboard deck.

1 P 15 5'-6" x 3'-0" 9" B.A. coaming 4 1/2" thick 2 1/2" Hatches fitted P.S. 3" bearing surface /
1 P 15 11'-10" x 3'-0" 9" B.A. " 4 1/2" " " " " " " " " /
1 P 15 2'-0" x 3'-0" 9" " " 4 1/2" " " " " " " " " /
Cleats spaced 23" x 20". 2 Tarpaulins for each Hatch.

Particulars of Companionways :-

NIL

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

After Well, 4 Vents 18" dia Coaming 33" high x 34. For Well 8 Vents 18" dia Coaming 36" high x 34 /
" " 2 " 11 1/2" " 36" " x 34 Forecastle 1 " 8 1/2" " 9" " x 25 /
" " 2 " deep Tank 11 1/2" dia Coaming 33" high 2 Stokhold 29" dia x 34. Coaming 3'-0" high /
All Vent Coamings provided with Wood plugs & canvas covers. 4 Eng Room 14" " x 25 " 3'-0" "

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

Fore Well, 2-Steel goosenecks 30" from deck, 1-C.I. gooseneck 15" from deck. /
Bridge deck 2-C.I. goosenecks 10" " " 3/4 hole on top of pipe /
Aft Well 3-Steel goosenecks P.S. 30" from deck. /
Poop 1 " " 16" from deck with filling cap on top. all air pipes /
Forecastle 1 air pipe with screwed cap. no plugs or covers provided for goosenecks. /
Wood hatch on Pumping hole.

Particulars of Gangway Cargo and Coaling Ports :-

2 Steel Cattle doors 1 P 15 in fore well 4'-2" x 3'-0" with 3 x 3 x 3/8 angle frame /
secured by 4 ship bolts, fitted with steel hinges. Bottom of door 12" from deck /
2-Steel Cattle doors on aft well P.S. same as fore well.

Particulars of Scuppers and Sanitary Discharge Pipes - 1-4" WC discharge from Crew quarters P.S. no storm Valve fitted.

1 Port & 2 Stand 4" W.C. discharges in Bridge space fitted with Cast Iron Storm Valves

1 " 2 " 2" Bath " " " no valves fitted.

1-4" W.C. discharge P.S. from Cattle mess W.C. fitted with Brass Storm Valve. All discharges are above the freeboard deck. /
Scuppers from freeboard deck through gunwale bar above deck No valves

Particulars of Side Scuttles :-

Poop. Glass ports in Brass frames fitted with C.I. hinged deadlights /
Forecastle Glass ports in Brass frames no deadlights fitted.

Particulars of Guard Rails :-

Steel rails two tier, stanchions spaced 5'-0" rails 3'-3" high /
fitted round Forecastle and poop.

Particulars of Gangways, Lifelines, etc. :-

see page 4

Provision made for rigging lifelines in wells for the protection of the crew when the temporary cattle shelter is dismantled.

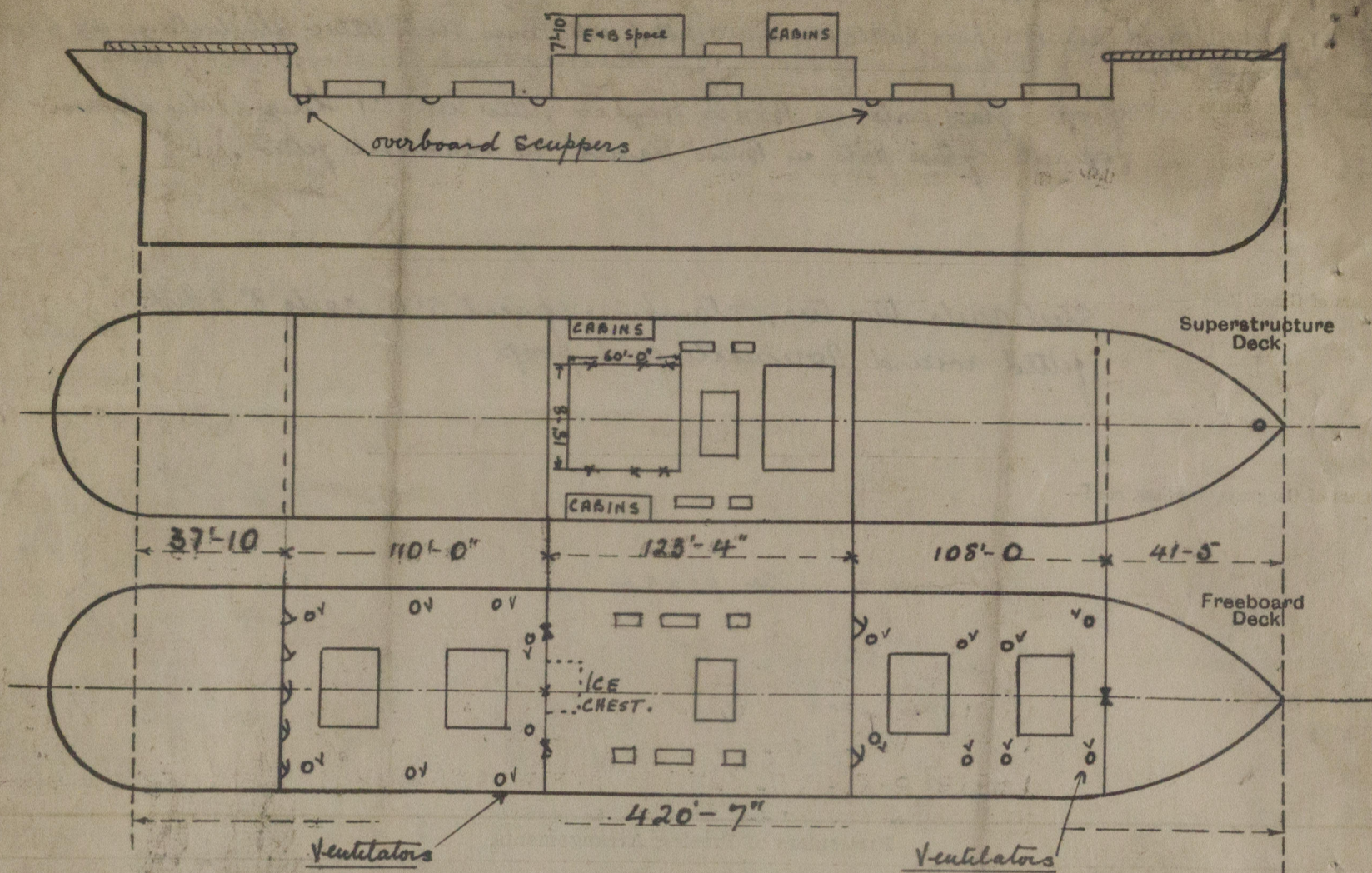
Particulars of Freeing Arrangements.						
	Length of Bulwark	Height of Bulwark	Size of Freeing Ports	Number each side	Area each side	Rule area each side
After Well	110'-0"	4'-2"	2'-3" + 2'-3" / 2'-6" x 1'-10"	2 / 3	23 / 13-5-4	22 sq ft
Forward Well	108'-0"	4'-2"	2'-3" + 2'-3" / 2'-6" x 1'-10"	3 / 2	24 / 9-0-9	21 3/4 sq ft
State position of each freeing port (F. and A. position and height above deck edge) / After Well: 18' 5" 39' 0" 26' 1" 19' 0" / Forward Well: 12' 5" 37' 0" 48' 9" 24' 4" / State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such: - 2 Horizontal Bars 9" apart, and Hinged shutters / Additional area where sheer is less than standard.						

Particulars of Superstructures, Trunks, Casings, Deckhouses.								
	Coaming	Plating	Stiffeners	Spacing	End Attachments of Stiffeners	Size of Openings	Height of Sills	Height of Casings
Poop Bulkhead	45	45	6 1/2 x 3 1/2 x 35	2'-6"	NIL	5'-6" x 3'-2" / 5'-6" x 3'-9"	18	8'-0"
Raised Quarter Deck Bulkhead	✓							
Bridge, After Bulkhead	35	35				4'-0" x 6'-6"	18	7'-10"
Bridge, Forward Bulkhead	45	45	8 1/2 x 3 1/2 x 35 BA	2'-6"	Bracketed Top & Bottom	2'-11" x 5'-4"	18	7'-10"
Forecastle Bulkhead	38	38	3 1/2 x 3 1/2 x 25	3'-0"	NIL	5'-0" x 4'-10"	18	8'-0"
Trunk, Aft								
Trunk, Forward								
Exposed Machinery Casings on Freeboard or Raised Quarter Decks								
Exposed Machinery Casings on Superstructure Decks	28	28	3 1/2 x 3 1/2 x 25	2'-6"	Bracketed Top	2'-0" x 5'-0"	18"	7'-10"
Machinery Casings within Superstructures not fitted with Class I Closing Appliances								
Deckhouses on Flush Deck Ships								

Particulars of Closing Appliances (state if capable of being manipulated from both sides).

Poop Bulkhead	Teak hinged doors to crew quarters manipulated both sides, glass ports brass frame C.I. deadlights
Raised Quarter Deck Bulkhead	✓
Bridge, After Bulkhead	Riveted channels full height; weather boards, Small hinged door to Ice box
Bridge, Forward Bulkhead	Steel Hinged doors 45. Slides in frame & dogs. manipulated from fore side only
Forecastle Bulkhead	Riveted channels full height for weatherboards, Hinged soft wood door in place
Exposed Machinery Casings on Freeboard or Raised Quarter Decks	Manipulated from both sides.
Exposed Machinery Casings on Superstructure Decks	Steel hinged doors to Stokhold & Galley, Teak wood door to Engine room
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	all worked from 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:—



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

This vessel is fitted with a wood deck from Poop to Bridge & Bridge to Forecastle, the bulwarks in the wells being boarded up to the height of the wood deck. This arrangement is for carrying cattle. Wood slaunches with wires are fitted round the wood deck at side. No arrangement for gangways or life lines provided when this deck is removed.

Builder's name and yard number

Russel & Co. Port-Glasgow.

Names of sister ships

Owners

Donaldson Line Ltd.

Fee £

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: 12

: 0

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