

-2 MAY 1932

Index No. **16883**
(For London Office only.)

Rpt. C.11.

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

GLASGOW REPORT No. 52420

Computation of Freeboard for Steamer, ~~Sailing Ship, Tanker~~
having R.Q.D. connected to Bridge and Forecastle disconnected

(Type of Superstructures.)

Ship's Name "CAIRNGORM."	Nationality and Port of Registry BRITISH GLASGOW.	Official Number 119113	Gross Tonnage 401	Date of Build 1904-4.
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Port of Survey AYR.

Date of Survey 14. 4. 32.

Name of Surveyor M. Macleod.

Particulars of Classification +100A1.

Moulded Dimensions: Length 141.5 Breadth 26.0 Depth 12.25

Moulded displacement at moulded draught = 85 per cent. of moulded depth 790 tons

Coefficient of fineness for use with Tables .722

Depth for Freeboard (D) Moulded depth ... <u>12.25</u> Stringer plate ... <u>.03</u> Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$ <u>✓</u> Depth for Freeboard (D) = <u>12.28</u>	Depth correction (a) Where D is greater than Table depth $(D - \text{Table depth}) R =$ $(12.28 - 9.43) 1.088 = + 3.10$ (b) Where D is less than Table depth (if allowed) $(\text{Table depth} - D) R =$ <u>✓</u> If restricted by superstructures <u>✓</u>	Round of Beam correction Moulded Breadth (B) <u>26.0</u> Standard Round of Beam = $\frac{B \times 12}{50} =$ <u>6.24</u> Ship's Round of Beam = <u>7.0</u> Difference <u>.76</u> Restricted to <u>.3045</u> Correction = $\frac{\text{Diff}}{4} \times \left(1 - \frac{S_1}{L} \right) =$ <u>.76</u> \times $\left(1 - \frac{.3045}{12.28} \right) =$ <u>.06</u>
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DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed ...					
" overhang ...					
R.Q.D. enclosed ...	<u>40.5</u>	<u>70.50</u>	<u>4'</u>	<u>✓</u>	<u>70.50</u>
" overhang ...					
Bridge enclosed ...	<u>8.75</u>	<u>8.75</u>	<u>7'</u>	<u>✓</u>	<u>8.75</u>
" overhang aft ...					
" overhang forward ...					
Fore enclosed <u>open</u> ...	<u>26.0</u>	<u>19.17</u>	<u>6.5'</u>	<u>✓</u>	<u>19.17</u>
" overhang ...					
Trunk aft ...					
" forward ...					
Tonnage opening aft ...					
" " forward ...					
Total ...	<u>105.25</u>	<u>98.42</u>			<u>98.42</u>

Standard Height of Superstructure 6.0

" " R.Q.D. 3.275

Deduction for complete superstructure 20.15

Percentage covered $\frac{S}{L} =$ 74.38%

" " $\frac{S_1}{L} =$ 69.55%

" " $\frac{E}{L} =$ 69.55%

Percentage from Table, Line A. 62.23%
(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 = $20.15 \times .6223 =$ -12.54

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ...	<u>24.15</u>	<u>1</u>	<u>✓</u>	<u>24.15</u>	<u>24.15</u>	<u>24.15</u>	<u>1</u>	<u>✓</u>	<u>24.15</u>
$\frac{1}{4}L$ from A.P. ...	<u>10.75</u>	<u>4</u>	<u>✓</u>	<u>43.00</u>	<u>12.0</u>	<u>11.85</u>	<u>4</u>	<u>✓</u>	<u>43.00</u>
$\frac{2}{4}L$ " ...	<u>2.66</u>	<u>2</u>	<u>✓</u>	<u>5.32</u>	<u>3.0</u>	<u>2.96</u>	<u>2</u>	<u>✓</u>	<u>5.32</u>
Amidships ...	<u>✓</u>	<u>4</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>4</u>	<u>✓</u>	<u>✓</u>
$\frac{3}{4}L$ from F.P. ...	<u>5.31</u>	<u>2</u>	<u>✓</u>	<u>10.62</u>	<u>5.0</u>	<u>5.04</u>	<u>2</u>	<u>✓</u>	<u>10.08</u>
$\frac{4}{4}L$ " ...	<u>21.49</u>	<u>4</u>	<u>✓</u>	<u>85.96</u>	<u>20.0</u>	<u>20.15</u>	<u>4</u>	<u>✓</u>	<u>80.60</u>
F.P. ...	<u>48.30</u>	<u>1</u>	<u>✓</u>	<u>48.30</u>	<u>45.0</u>	<u>45.00</u>	<u>1</u>	<u>✓</u>	<u>45.00</u>
Total ...	<u>217.35</u>			<u>217.35</u>					<u>208.15</u>

STAN.	ACT.			
5.31	5.04	3	15.93	15.12
21.49	20.15	3	64.47	60.45
48.30	45.00	1	48.30	45.00
			128.70	120.57

Mean actual sheer aft = Excess

Mean standard sheer aft = 128.70

Mean actual sheer forward = Deficient 93.68%

Mean standard sheer forward = 120.57

Length of enclosed superstructure forward of amidships = .06

" " aft of " = .50

Sheer after increased by virtue of increased R.Q.D. height = $\frac{4.0}{3.275} =$ 8.5

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) =$ $\frac{9.20}{18} \times (.75 - .3719) = + .19$

If limited on account of midship superstructure. ✓

If limited to maximum allowance of $1\frac{1}{2}$ ins. per 100 ft. ✓

Deduction for Tropical Freeboard.

Addition for Winter and Winter North Atlantic Freeboard.

Depth to Freeboard Deck = 12.28

Summer freeboard = .46

Moulded draught (d) = 11.82

Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = 2.95 = 3"

Addition for Winter North Atlantic Freeboard (if required) = 2"

Deduction for Fresh Water.

Displacement in salt water at summer load water line $\Delta =$ 916

Tons per inch immersion at summer load water line $T =$ 7.2

Deduction = $\frac{\Delta}{40 T}$ inches = 3.22

= 3 1/4"

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient $\frac{.722 + .68}{1.36} =$ 1.402

	+	-
Depth Correction ...	<u>3.10</u>	<u>✓</u>
Deduction for superstructures ...	<u>12.54</u>	<u>✓</u>
Sheer correction ...	<u>.19</u>	<u>✓</u>
Round of Beam correction ...	<u>.06</u>	<u>✓</u>
Correction for Thickness of Deck amidships ...	<u>✓</u>	<u>✓</u>
Other corrections, scantlings, etc. ...	<u>✓</u>	<u>✓</u>
	<u>3.29</u>	<u>12.60</u>
Summer Freeboard =	<u>5.52</u>	

14.39

14.83

9.31

5.52

SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, Wood, Steel, Deck:— 0' - 5 1/2"

Tropical Fresh Water Line above Centre of Disc
Fresh Water Line " "
Tropical Line " "
Winter Line below " " ...	<u>3"</u>
Winter North Atlantic Line " "

Tropical Fresh Water Freeboard ...

Fresh Water " ...

Tropical " ...

Winter " ...

Winter North Atlantic " ...

0' - 8 1/2"

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PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS									
Minor Hatches									
Description of Hatchway	Well No. 1.	R.R.D. No. 2.	Side Scuttles	Side Scuttles	Side Scuttles	Side Scuttles	Side Scuttles	Side Scuttles	Side Scuttles
Dimensions of Hatchway	26'3"x12'6"	12'3"x12'6"	21'x18"	21'x18"	21'x18"	21'x18"	21'x18"	21'x18"	21'x18"
COAMINGS									
Height above Deck	31"	26"	24 1/2"	24 1/2"	24 1/2"	24 1/2"	24 1/2"	24 1/2"	24 1/2"
Thickness Sides	7/16"	7/16"	7/16"	7/16"	7/16"	7/16"	7/16"	7/16"	7/16"
Stiffeners	6" B.H.	6" B.H.	6" B.H.	6" B.H.	6" B.H.	6" B.H.	6" B.H.	6" B.H.	6" B.H.
Brackets, Stays	none	none	none	none	none	none	none	none	none
HATCH BEAMS									
Number	Two	Two	Two	Two	Two	Two	Two	Two	Two
Spacing	8'9"	8'9"	8'9"	8'9"	8'9"	8'9"	8'9"	8'9"	8'9"
Scantling and Sketch	3 1/2" x 3 1/2"	3 1/2" x 3 1/2"	3 1/2" x 3 1/2"	3 1/2" x 3 1/2"	3 1/2" x 3 1/2"	3 1/2" x 3 1/2"	3 1/2" x 3 1/2"	3 1/2" x 3 1/2"	3 1/2" x 3 1/2"
Bearing Surface	3"	3"	3"	3"	3"	3"	3"	3"	3"
FORE AND AFTERS									
Number	3	3	3	3	3	3	3	3	3
Spacing	3'-1"	3'-1"	3'-1"	3'-1"	3'-1"	3'-1"	3'-1"	3'-1"	3'-1"
Unsupported Lengths	8'-9"	12'-6"	8'-9"	12'-6"	8'-9"	12'-6"	8'-9"	12'-6"	8'-9"
Scantling and Sketch	2" B.	2" B.	2" B.	2" B.	2" B.	2" B.	2" B.	2" B.	2" B.
Bearing Surface	3"	3"	3"	3"	3"	3"	3"	3"	3"
HATCH COVERS									
Material	wood	wood	wood	wood	wood	wood	wood	wood	wood
Thickness	2 1/4"	2 1/4"	2 1/4"	2 1/4"	2 1/4"	2 1/4"	2 1/4"	2 1/4"	2 1/4"
How fitted	athwartships	athwartships	athwartships	athwartships	athwartships	athwartships	athwartships	athwartships	athwartships
Bearing Surface	3"	3"	3"	3"	3"	3"	3"	3"	3"
Spacing of Cleats	24"	24"	24"	24"	24"	24"	24"	24"	24"
Number of Tarpaulins	2	2	2	2	2	2	2	2	2

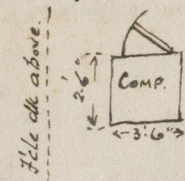
Particulars of fiddle, funnel and ventilator coamings:—

Stokehold gratings covered by strong steel hinged cover. ✓
 Fiddle and funnel vents in efficient condition. ✓
 Engine room skylight of wood strongly constructed. ✓

Particulars of Flush Bunker Scuttles:—

None. ✓

Particulars of Companionways:—



Steel companionway under side deck to bow space, of strong construction with hinged hardwood door 1 1/2" thick opened from both sides. 13" sill above wood sheathing on freeboard deck door 4'7" x 1'10 1/2" ✓

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

One Ventilator on side deck 8 1/2" dia, coaming 18" x 1/4", led to hold. ✓
 One Ventilator on R.R. deck 9" dia, " 26" x 1/4", " " ✓
 Ventilators constructed in accordance with rule requirements ✓
 No plugs and covers supplied. ✓

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

One C.I. air pipe on freeboard deck, immediately behind stem 7" high x 3 1/2" dia. led to fore peak tank. ✓
 One C.I. air pipe on raised B. deck, at aft end of engine casing 4 1/2" high x 2 1/2" dia. led to aft peak. ✓
 No plugs and covers supplied. ✓

Particulars of Gangway Cargo and Coaling Ports:—

None. ✓

Particulars of Scuppers and Sanitary Discharge Pipes —

No scuppers below freeboard deck. ✓
 W.C. discharges fitted with non-return valves at ship's side. ✓

Particulars of Side Scuttles:—

Side Scuttles below freeboard deck fitted with hinged dead-lights. ✓
 All scuttles of substantial construction. ✓

Particulars of Guard Rails:—

Flt. 3'0" high, 2 rails, stanchions 5'6" apart. ✓
 Bridge. Steel bulk 35" high with steel rails on top, efficiently supported. ✓
 Well + R.R.D. Steel Bulwarks, efficiently supported. ✓

Particulars of Gangways, Lifelines, etc.:—

Moody and lifelines. ✓
 Gangway fitted in Forward Well. ✓
 along top of hatchway. Stanchions 11 ft. apart, 3 ft. high ✓
 above top of hatchway. Lifeline connected to ladders at ends of well. ✓

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	70.5'	3'1 1/2"	2.5' x 1.5' x 2.5' x 1.75' x 2.5' x .75'	one two one	74.5 14.375	14'1".
Forward Well	26.45'	4'3"	2.5' x 1.75' x	three	13.125	10.04

State position of each freeing port ... After Well: 7'6" 31'7" 62" from Bulwark to fore edge of port. 14" sill.
 (F. and A. position and height above deck edge) Forward Well: 4'9" 16'9" 57'9" from Bulwark to aft end of port. 9" sill.
 State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such:— Balanced 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								
Raised Quarter Deck Bulkhead		30	3 x 3 x 30	30"	None			
Bridge, After Bulkhead								
Bridge, Forward Bulkhead	7/16"	7/16"	6 x 3 x 70 B.H.	30"				
Forecastle Bulkhead								
Trunk, Aft								
Trunk, Forward								
Exposed Machinery Casings on Deck	7/16"	1/4"	2 1/2" x 2 1/2" x 1/4"	30"		2 each side 2	15"	7'0"
Exposed Machinery Casings on Superstructure Decks						3' x 2'		
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).

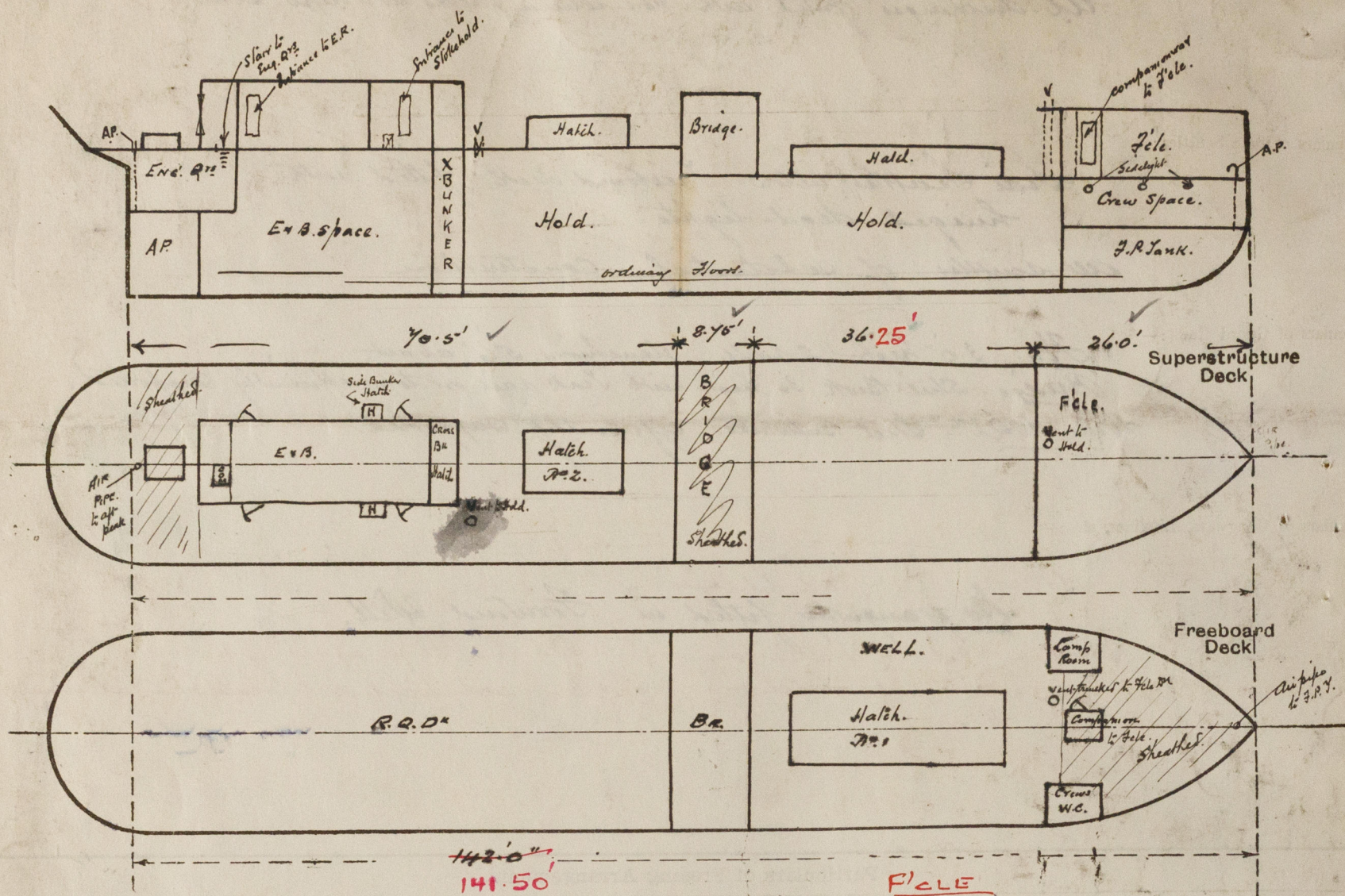
Poop Bulkhead	✓
Raised Quarter Deck Bulkhead	none ✓
Bridge, After Bulkhead	none ✓
Bridge, Forward Bulkhead	none ✓
Forecastle Bulkhead	✓
Exposed Machinery Casings on Deck	Two steel hinged doors on each side, operated from both sides. ✓
Exposed Machinery Casings on Superstructure Decks	✓
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	✓
Deckhouses on Flush Deck Ships	Companionway (Steel Trunk under side deck to bow space) hinged door, operated from both sides. ✓

W465-0031 (2/2)

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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:—



$$\begin{aligned}
 & \text{F'CLE} \\
 & 26.00 \\
 & 14.15 \\
 & 11.85 @ 50\% = 5.92 \\
 & 14.15 \times .9368 = 13.25 \\
 & 19.17 = \text{Equivalent of open } 2'
 \end{aligned}$$

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

This vessel has been examined on slipway, with a view to the requirements of 3rd Special Survey No. 2. Being carried out. Recommendations have been made, but no repairs have been effected meantime.

~~The hatch covers, fore & aft are to be overhauled & renewed as required by rule~~
~~Wash port doors, sidelights, ventilator covers, & bulwark stanchions~~
~~to be overhauled & renewed where necessary~~

From Blue Sheet

75% 9.62

Ex B. 9'-7 1/2"

$\Delta = 675 + T.P.1 = 7.16$

85% Wld. 10.41

= 10'-5"

Keel = 7'

11'-0"

11'-0"

9'-7 1/2"

1-4 1/2"

$\Delta = 794$

$\times .995 = 790$

$16 \frac{1}{2} \times 7.2 = 119$

Wld dr = 11.82

= 11'-10"

Keel = 7'

12'-5"

9'-7 1/2"

2'-9 1/2"

$33 \frac{1}{2} \times 7.2 = 241$

$\Delta = 916 + T.P.1 = 7.2$

Builder's name and yard number J. Shearer & Sons.

Names of sister ships

Owners

W. Robertson.

Fee £

5 : 2 : 0

Received by me

Exp. 12/2



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