

Monarch
Rpt. C.11.

14 MAR 1932

Index. No. 34146.
(For London Office only.)

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD. 10.797.

Computation of Freeboard for Steamer, Sailing Ship, Tanker				Port of Survey <u>Belfast</u>	
having <u>Forecastle & Bridge</u>				Date of Survey <u>While building</u>	
(Type of Superstructures.)				Name of Surveyor <u>L.R. Egan</u>	
Ship's Name	Nationality and Port of Registry	Official Number	Gross Tonnage	Date of Build	
<u>HIGHLAND PATRIOT</u>	<u>British Belfast</u>	<u>161883</u>	<u>14156.39</u>	<u>1932</u>	
Moulded Dimensions: Length <u>520</u>		Breadth <u>69</u>	Depth <u>43-9</u>	Particulars of Classification <u>+100A1</u>	
Moulded displacement at moulded draught = 85 per cent. of moulded depth		<u>29175</u> tons		<u>With freeboard</u>	
Coefficient of fineness for use with Tables <u>765</u>					

Depth for Freeboard (D)		Depth correction		Round of Beam correction	
Moulded depth ...	<u>43-9</u>	(a) Where D is greater than Table depth		Moulded Breadth (B)	<u>69</u>
Stringer plate ...	<u>04</u>	(D-Table depth) R = $(43-85-34-66)3$		Standard Round of Beam = $\frac{B \times 12}{50}$	<u>16-56</u>
Sheathing on exposed deck <u>12 x 6197</u>	<u>07</u>	= <u>27-54</u> +		Ship's Round of Beam = $\frac{b}{10-56}$	<u>10-56</u>
T $\left(\frac{L-S}{L}\right) = \frac{177(520-200-4)}{520}$		(b) Where D is less than Table depth (if allowed)		Difference	
Depth for Freeboard (D) = <u>43-86</u>		(Table depth-D) R =		Restricted to	
		If restricted by superstructures		Correction = $\frac{\text{Diff}}{4} \times \left(1 - \frac{S_1}{L}\right)$	<u>10-56</u> $\times \frac{7753}{4} = +2-05$

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 ...	✓				
" overhang ...	✓				
Bridge enclosed <u>open</u> ...	<u>96-75</u>	<u>48-37</u>	<u>8-9</u>	<u>✓</u>	<u>48-37</u>
" overhang aft ...	<u>99-5</u>	<u>48</u>			<u>410</u>
" overhang forward	<u>99-5</u>	<u>68-48</u>			<u>68-48</u>
F'cle enclosed <u>open</u> ...	<u>101-0</u>	<u>48</u>	<u>8-5</u>	<u>✓</u>	<u>76-6</u>
" overhang ...	<u>99-5</u>				
Trunk aft ...	✓				
" forward ...	✓				
Tonnage opening aft ...	✓				
" forward	✓				
Total ...	<u>197-75</u>	<u>116-85</u>			<u>116-85</u>

Standard Height of Superstructure	<u>7-6</u>
" " R.Q.D.	✓
Deduction for complete superstructure	<u>42</u>
Percentage covered $\frac{S}{L} = \frac{209-4-100}{520}$	<u>38-03%</u>
" $\frac{S_1}{L} =$	<u>22-47%</u>
" $\frac{E}{L} = \frac{186-6-100}{520}$	<u>22-47%</u>
Percentage from Table, Line A.	<u>11-23</u>
(corrected for absence of forecastle (if required))	
Percentage from Table, Line B.	<u>14-26</u>
(corrected for absence of forecastle (if required))	<u>24-01</u>
Interpolation for bridge less than 2L (if required)	<u>11-23 + (2-03 x 0-92/20)</u>
Deduction = <u>10</u>	<u>42-0 x 12-64 = -5-31</u>

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ...	<u>62</u>	<u>1</u>		<u>62</u>	<u>45</u>	<u>45</u>	<u>1</u>		<u>45</u>
L from A.P. ...	<u>27-59</u>	<u>4</u>		<u>110-4</u>	<u>18</u>	<u>18</u>	<u>4</u>		<u>72</u>
L " ...	<u>6-82</u>	<u>2</u>		<u>13-64</u>	<u>5</u>	<u>5</u>	<u>2</u>		<u>10</u>
Amidships ...	<u>0</u>	<u>4</u>					<u>4</u>		
L from F.P. ...	<u>13-64</u>	<u>2</u>		<u>27-28</u>	<u>11-2</u>	<u>11-2</u>	<u>2</u>		<u>23</u>
L " ...	<u>55-2</u>	<u>4</u>		<u>220-8</u>	<u>45</u>	<u>45</u>	<u>4</u>		<u>180</u>
F.P. ...	<u>124</u>	<u>1</u>		<u>124</u>	<u>110</u>	<u>110</u>	<u>1</u>		<u>110</u>
Total ...				<u>558-0</u>					<u>440</u>

Mean actual sheer aft = Deficient ✓
Mean standard sheer aft =
Mean actual sheer forward = Deficient 84-58%
Mean standard sheer forward =

Length of enclosed superstructure forward of amidships =
L
" " aft of " =

FORWARD SHEER	
Standard	Actual
<u>0</u>	<u>0</u>
<u>13-64</u>	<u>40-92</u>
<u>55-18</u>	<u>165-54</u>
<u>124-0</u>	<u>124-00</u>
<u>330-46</u>	<u>279-5</u>

Correction = $\frac{\text{Difference between sums of products}}{18} \left(\frac{75-S}{2L} \right) = \frac{118-0}{18} \left(\frac{75-19}{2} \right) = 3-68$ +

If limited on account of midship superstructure.

If limited to maximum allowance of 1½ ins. per 100 ft.

Deduction for Tropical Freeboard.

Addition for Winter and Winter North Atlantic Freeboard.

Depth to Freeboard Deck = 44-00
Summer freeboard = 15-40
Moulded draught (d) = 28-60

Deduction for Tropical freeboard and addition for

Winter freeboard = $\frac{d}{4}$ inches = 7-15

Addition for Winter North Atlantic Freeboard (if required) =

Deduction for Fresh Water.

Displacement in salt water at summer load water line

$\Delta = 21733$

Tons per inch immersion at summer load water line

T = 73-2

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

= 7-42 = 7½

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient $\frac{765+68 \times 109-1}{1-36} = 115$

	+	-
Depth Correction ...	<u>27-51</u>	<u>5-31</u>
Deduction for superstructures ...	<u>7</u>	<u>10</u>
Sheer correction ...	<u>3-68</u>	
Round of Beam correction ...	<u>2-05</u>	
Correction for Thickness of Deck amidships <u>2½</u>	<u>1-66</u>	
Other corrections, scantlings, etc. and to correspond to approved moulded winter draught of <u>28-0</u>	<u>53</u>	<u>40-22</u>
	<u>75-20</u>	<u>5-31</u>
Summer Freeboard =	<u>102-184-75</u>	

SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line

Tropical Fresh Water Line above Centre of Disc ...	<u>14¾</u>	Tropical Fresh Water Freeboard ...	<u>15'-4¾</u>
Fresh Water Line " " ...	<u>7½</u>	Fresh Water " " ...	<u>14'-2"</u>
Tropical Line " " ...	<u>7¼</u>	Tropical " " ...	<u>14'-9¼</u>
Winter Line below " " ...	<u>7¼</u>	Winter " " ...	<u>16'-0"</u>
Winter North Atlantic Line " " ...		Winter North Atlantic " " ...	

A passenger line to be marked 7¼" below the centre of disc.

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Highland Patriot

Particulars of Scuppers and Sanitary Discharge Pipes — Scuppers draining spaces below freeboard deck through ship's side are fitted with one brass storm valve, or where of bollinson type or similar pipe type they can be closed by a screw down plug always accessible. Inner ends of scuppers have gaskets, or brine sealed traps, no means of closing.

Sanitary discharges from spaces below freeboard deck led through ship's side have one brass storm valve. Inner ends have no means of water passing inboard.

Ventilated pipes from sanitary drains from spaces below freeboard deck — 1. $\frac{3}{4}$ " dia; 4. 2" dia. these pass thro' shell immediately below bridge deck stringer and have no means of closing, or of preventing ingress of water.

Particulars of Side Scuttles:

Between Freeboard + 2nd Deck — Circular side scuttles fitted with permanent hinged deadlights.

Square hinged ports of special pattern fitted with fixed light with portable deadlights attached by chain.

Between 2nd + 3rd deck aft, over afterspeak — circular side scuttles fitted with permanent hinged deadlights.

Particulars of Guard Rails:—

Efficient guard rails are fitted round fore-castle deck, and at sides and after end of bridge.

Bulwork is fitted across front of bridge.

guard rails are fitted in fore well between fore-castle sp. deck house, and between fore. deck house and bridge, and abaft bridge and round stern.

Particulars of Gangways, Lifelines, etc.:—

None.

A portable gangway is provided between the bridge and the deck house in the forward 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	None.					
Forward Well	None		20 $\frac{1}{2}$ " x 13"	One.		

State position of each freeing port { After Well:—
(F. and A. position and height above deck edge) { Forward Well:—

State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such:— 2 Fore & aft bars evenly spaced.

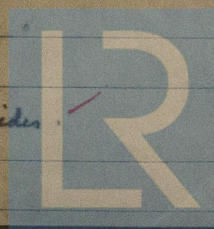
Additional area where sheer is less than standard.

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	✓							
Bridge, After Bulkhead	Considered open		on account	of open alleyway				
Bridge, Forward Bulkhead	44	40	$9\frac{1}{2} \times 3\frac{1}{2} \times 50$ $9 \times 38 \times 3\frac{1}{2} \times 54$ 4 3 webs.	29 $\frac{1}{2}$ average	hugged 5. $\frac{3}{4}$ " R.	Alleyway 5'-0" wide	✓	✓
Fore-castle Bulkhead	Considered open		on account	of open alleyway.				
Trunk, Aft	✓							
Trunk, Forward	✓							
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	$\frac{1}{2}$	25	$3\frac{1}{2} \times 2\frac{1}{2} \times 40$	27"	To beam above	width 30"	12"	8'-6"
Deckhouses on Flush Deck Ships	✓				stopped short below			

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

Poop Bulkhead	✓
Raised Quarter Deck Bulkhead	✓
Bridge, After Bulkhead	open
Bridge, Forward Bulkhead	open
Fore-castle Bulkhead	open
Exposed Machinery Casings on Free-board or Raised Quarter Decks	Storm boards in riveted channels to full height
Exposed Machinery Casings on Super-structure Decks	
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	Tank door $1\frac{5}{8}$ " thick. Can be opened from both sides.
Deckhouses on Flush Deck Ships	✓



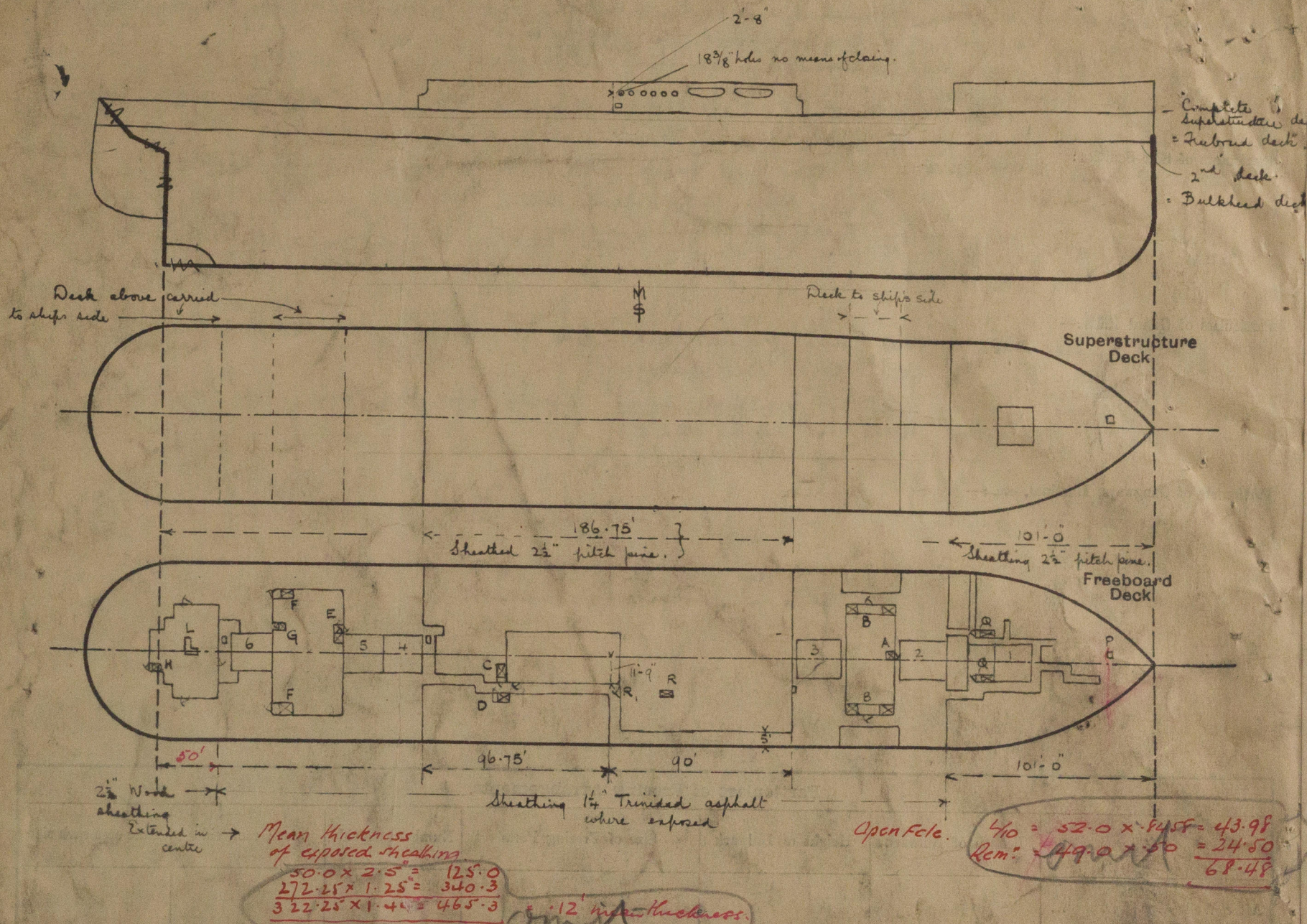
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Wh06-0136 (2/2)

Highland Patriot

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 shown on the following sketches:—



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

7. Other openings in freeboard deck. P. In fore-castle fwd. 3' x 3'. Coaming angle 3 x 3 1/2. Work covers lead in.
 - Q. Port scuttled in fore-castle. Surrounded by steel partitions open at beams entered by doorway. Sills 12" above steel. Width of opening 30" at 27 1/2" port. Doors lead 1 1/4" opening from both sides.
 - R. Emergency stairway stbd. in bridge. Coaming 5" angle - no other protection. Nearest doorway is door R, in alleyway. Non interlight - 1/2" half open rails. Sill 12". R to R, approximately 21 ft.
 - S. In aftermost house - stairway opening. Coaming across front of stairway 3". Entrance port scuttled. Sills 12" above steel deck. Width of opening 29 1/2". Doors, 1 1/4" lead. Entrance to side of house 24 1/2" width of opening. Sill 12". Door 2" lead opening both sides.
- Access openings to N.R. valves in discharge pipes in fwd deck:** Size 5 1/2" x 3 1/2" and 8 1/2" x 6 1/2" closed by 32 plate cover rubber gasket 3/8" screws spaced 2 1/2" flush with asphalt sheathing.
- This vessel has a complete superstructure deck considered the freeboard deck, without tonnage opening, with long bridge and fore-castle. Long bridge has an alleyway as shown with openings in shell on starboard side only as shown. Scantlings are on a basis for draft of 28'-0" molded for all seasons, see Secretary's letter dated 12th Feb. 1931.
- With regard to the regulations now in force - pre Convention - the statutory deck line is 1/2" above intersection of top of 2 1/2" thick sheathing on steel deck (1 1/2") and ship's side. This applies to port side as asphalt is laid on starboard side. The statutory deck line is however marked in the same position, port and starboard, as in sister vessels.
- The insulation plugs fitted at A & B openings may be omitted if emigrants are carried in the tween decks below the freeboard deck.
- Two midship section plans, and approved profile plan are forwarded for reference.

Builder's name and yard number. Harland & Wolff Ltd. No. 916.

Names of sister ships. Highland Monarch, Highland Chieftain, Highland Bugle, Highland Princess.

Owners. Nelson Steam Navigation Co. Ltd.

Fee £ 20 : 0 : 0

Received by me

FW. 28 28 0 20 = 21206
720 x 73.2 = 527