

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

Computation of Freeboard for Steamer, Sailing Ship, Tanker

Forecastle and Bridge

Port of Survey London

Last Date of Survey 9th June 1932

(Type of Superstructures.)

B.P.T.N. 12.7.28

Ship's Name **LAND MONARCH** Nationality and Port of Registry **British Belfast** Official Number **148158** Gross Tonnage **14127** Date of Build **1928-10**

Name of Surveyor **James B. Butler**Moulded Dimensions: Length **520.0** Breadth **69.0** Depth **43.8** (42.16 for mgt)Moulded displacement at moulded draught = 85 per cent. of moulded depth **29175** tonsCoefficient of fineness for use with Tables **.765**Particulars of Classification **+100 A1**

Ltr 23/10/31 with freeboard.

Depth for Freeboard (D)		Depth correction	Round of Beam correction
Moulded depth	43.75	(a) Where D is greater than Table depth (D-Table depth) R = $(43.87 - 34.67) \times 3 = 9.20 \times 3 = 27.60$	Moulded Breadth (B) 69.00
Stringer plate	.04	(b) Where D is less than Table depth (if allowed) (Table depth-D) R =	Standard Round of Beam = $\frac{B \times 12}{50} = \frac{69 \times 12}{50} = 16.56$
Sheathing on exposed deck		If restricted by superstructures	Ship's Round of Beam = 6"
$T \left(\frac{L-S}{L} \right) = \frac{60 \times 2.5 + 262.25 \times 1.25}{12 \times 520} = .08$			Difference Defect = 10.56
Depth for Freeboard (D) = 43.87			Restricted to
			Correction = $\frac{\text{Diff}}{4} \times (1 - \frac{S_1}{L}) = \frac{10.56}{4} \times (1 - \frac{.775}{.225}) = +2$

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	96.75	48.37	8'6" + 2 1/2"	wood	48.37
" overhang aft					
" overhang forward					
Forecastle enclosed	101.00	68.60	8'0" + 2 1/2"	wood	68.60
" overhang					
Trunk aft					
" forward					
Tonnage opening aft					
" forward					
Total	197.75	116.97			116.97

Standard Height of Superstructure 7.50

" " R.Q.D.

Deduction for complete superstructure 42.00

Percentage covered $\frac{S}{L} = 38.03\%$ " $\frac{S_1}{L} = 22.50\%$ " $\frac{E}{L} = 22.50\%$

Percentage from Table, Line A. 11.25%

(corrected for absence of forecastle (if required))

Percentage from Table, Line B. 14.27%

(corrected for absence of forecastle (if required))

Interpolation for bridge less than .2L (if required) $11.25 + (3.02 \times \frac{.093}{.200}) = 12.65\%$ Deduction = $42.0 \times .1265 = 5.31$

SHEER CORRECTION.

Station	Standard Ordinate	S	Product	Actual Ordinate	Effective Ordinate	S	Product
A.P.	62.00	1	62.00	45.0	45.00	1	45.00
1/4 L from A.P.	27.59	4	110.36	18.5	18.56	4	74.24
1/2 L	6.82	2	13.64	4.5	4.63	2	9.26
Amidships		4		0		4	
3/4 L from F.P.	13.64	2	27.28	11.5	11.33	2	22.66
1/4 L	55.18	4	220.72	45.5	45.41	4	181.64
F.P.	124.00	1	124.00	110.0	110.00	1	110.00
Total			558.00				442.80

Correction = $\frac{\text{Difference between sums of products}}{18} = \frac{115.2}{18} = 6.4$

If limited on account of midship superstructure.

Mean actual sheer aft = Deficient

Mean actual sheer forward = Deficient (.8480)

Length of enclosed superstructure forward of amidships = ✓

" " aft of " = ✓

Forward Sheers

Standard	Actual
13.64	11.33
55.18	45.41
124.00	110.00
330.46	280.22

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 = 44.00
Summer freeboard = 15.40

Moulded draught (d) = 28.60

for Tropical freeboard and addition for

freeboard = $\frac{d}{4}$ inches = 7.15

Winter North Atlantic Freeboard (if

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

= 7.42

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient $\frac{765 + .68}{1.36} = \frac{1.445}{1.36}$

	+	-
Depth Correction	27.60	
Deduction for superstructures		5.31
Sheer correction	3.58	
Round of Beam correction	2.05	
Correction for Thickness of Deck amidships	1.54	
Other corrections, scantlings, etc. and to compound 1/2 approved moulded winter draft of 28'-0"	40.43	
	75.20	5.31
Summer Freeboard = 184.75		

FREEBOARD amidships from Centre of Disc to top of Deck Line

Tropical Fresh Water Line above Centre of Disc	14 1/2"
Fresh Water Line	14 1/2"
Tropical Line	14 1/2"
Winter Line below	14 1/2"
Winter North Atlantic Line	14 1/2"

Wood, Steel, Deck	15 1/2"
Tropical Fresh Water Freeboard	14 1/2"
Fresh Water	14 1/2"
Tropical	14 1/2"
Winter	16'-0"
Winter North Atlantic	16'-0"

A horizontal line to be marked 7 1/2" below the upper line

MARKING FORM
15/11/31

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PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS

Description of Hatchway		Forecastle	N:1	N:2	N:3	N:4+5	N:6
Dimensions of Hatchway		22'6" x 16'0"	22'6" x 16'0"	24'9" x 16'0"	24'9" x 16'0"	20'3" x 16'0"	20'3" x 16'0"
COAMINGS	Height above Deck	19 3/4	6 1/2	22 3/4	16 3/4	16 3/4	16 3/4
	Thickness	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4
	Sides	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4
	Ends	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4
COAMINGS	Stiffeners	None	None	None	None	None	None
	Brackets, Stays	None	None	None	None	None	None
HATCH BEAMS	Number	5	2	3	3	2	2
	Spacing	3'9"	7'6"	4'1 1/2"	4'1 1/2"	6'9"	6'9"
	Scantling and Sketch	12 x 5 x 5.0	3 1/2 x 3 x 6.2	3 1/2 x 3 x 6.2	3 1/2 x 3 x 6.2	3 1/2 x 3 x 6.2	3 1/2 x 3 x 6.2
	Bearing Surface	3"	6 x 4 x 6.2	3"	3"	3"	3"
FORE AND AFTERS	Number						
	Spacing						
	Unsupported Lengths						
	Scantling* and Sketch			None			
FORE AND AFTERS	Bearing Surface						
HATCH COVERS	Material	W.P.	W.P.	W.P.	W.P.	W.P.	W.P.
	Thickness	3"	2 1/2"	3"	3"	3"	3"
	How fitted	7 x A	7 x A	7 x A	7 x A	7 x A	7 x A
	Bearing Surface	3"	3"	3"	3"	3"	3"
Spacing of Cleats		22' to 24'	22' to 24'	22' to 24'	22' to 24'	22' to 24'	22' to 24'
Number of Tarpaulins		3"	3"	3"	3"	3"	3"
*Are wood fore and afters steel shod at all bearing surfaces?		yes					
Are battens and wedges efficient and in good condition?		yes					
Are tarpaulins in good condition and in accordance with rule requirements?		yes					
Are lashings provided in accordance with rule requirements?		yes					

For small hatchways see page 4.

Looking bars fitted to No. 3 hatchway at Bn. 2/12/41

Particulars of fiddle, funnel and ventilator coamings:—

Engine skylight of teakwood strongly constructed.
Funnel and fiddle vents in efficient condition.
No exposed gratings.

Particulars of Flush Bunker Scuttles:—

None

Particulars of Companionways:—

None

For particulars of Entrances to spaces below Freeboard deck see page 4.

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

Forecastle deck: One to fore peak 15" dia. Coaming 2'9" x 4'0". Three to hold - two at 18" dia & one at 24" dia. Coaming 2'9" x 4'4".
Upper deck: Six to hold 24" dia. Coamings 10'8" x 4'4" efficiently supported. Four to hold 24" dia coamings 2'6" x 4'4". Fifteen 12" x 3" to 15" x 4". Coamings 2'6" to 3'0" x 3'6" led to below freeboard deck.
Officers Bridge deck: Two to hold 24" dia. Coamings 2'9" x 4'4".
Deck house aft: Two to hold 18" dia. Coamings 2'4" x 3'8". Three to steering Comp. 12" dia. Coamings 2'4" x 3'8".
Two fan vents to Tunnel 15" dia.
All vents constructed in accordance with Rules. Closing appliances fitted to hold vents on. Closing appliances fitted to hold vents on.
Forecastle deck: One to fore peak 2'0". One to duct keel 12'0" x 4" dia efficiently supported.
Upper deck: Fifteen to D/B tanks & after peak tank 16" to 3'3" x 3'6" dia.
Bridge deck: Twelve to D/B tanks & 110 to 3'0" x 2'2" to 4" dia.
No closing appliances fitted to upper air pipes.
Efficient closing appliances fitted.

Particulars of Gangway Cargo and Coaling Ports:—

Two W.T gangway doors below upper and 2nd decks on port & starboard sides.
One at 6'0" x 3'10" and one at 5'0" x 3'10" efficiently constructed.



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Particulars of Scuppers and Sanitary Discharge Pipes:—

Eight Collinsons scuppers each side from upper deck. - Ten pipe scuppers on starboard side and three pipe scuppers on port side from upper deck. - No storm valves fitted. ✓
 One refuse shoot from galley on starboard side fitted with non-return valve near inner end, and a steel hinged W.T. flap at top of hopper. ✓
 All scuppers and sanitary discharge pipes from spaces below freeboard deck fitted with non-return valves at ship's side. Deficient traps at inner ends, with exception of several Collinsons scuppers from 2nd deck which are closed by accessible W.T. screw down plugs. ✓

Particulars of Side Scuttles:—
 All side scuttles below freeboard deck fitted with strong hinged or portable dead lights.

The vertical distance of the sill of the lowest side scuttle below top of steel freeboard deck at side amidships is 7'-8½". Fore + aft position 244'-7" aft of midships. ✓

Particulars of Guard Rails:—

Forecastle deck:— 3'-6" high, 3 rods, and steel tube rail. Stanchions 5 ft apart.
 Bridge deck:— 3'-4" high, 3 rods, and teakwood rail. Stanchions 4'-9" apart.
 Upper deck:— 3'-6" high, 4 rods, and steel tube rail. Stanchions 4'-0" to 5'-0" apart.
 Upper deck aft end:— 3'-6" high, 3 rods, and teakwood rail. Stanchions 4'-6" apart. ✓

Particulars of Gangways, Lifelines, etc.:—

A Portable Gangway fitted from fore end of bridge to aft end of officers bridge.

No life lines fitted. 1.

The crew are berthed forward.

Lifelines fitted at Bars.
 2/12/41

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	✓	✓	✓	✓	✓	✓
Forward Well <i>Starboard side only</i>	90'-0"	4'-4"	1'-9" x 12"	One	1.53 sq ft	✓

State position of each freeing port } After Well:— ✓
 F. and A. position and height above deck edge) Forward Well:— Fore + aft position see sketch. Height above deck 11"
 State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such:— 3 bars.

Additional area where sheer is less than standard. ✓

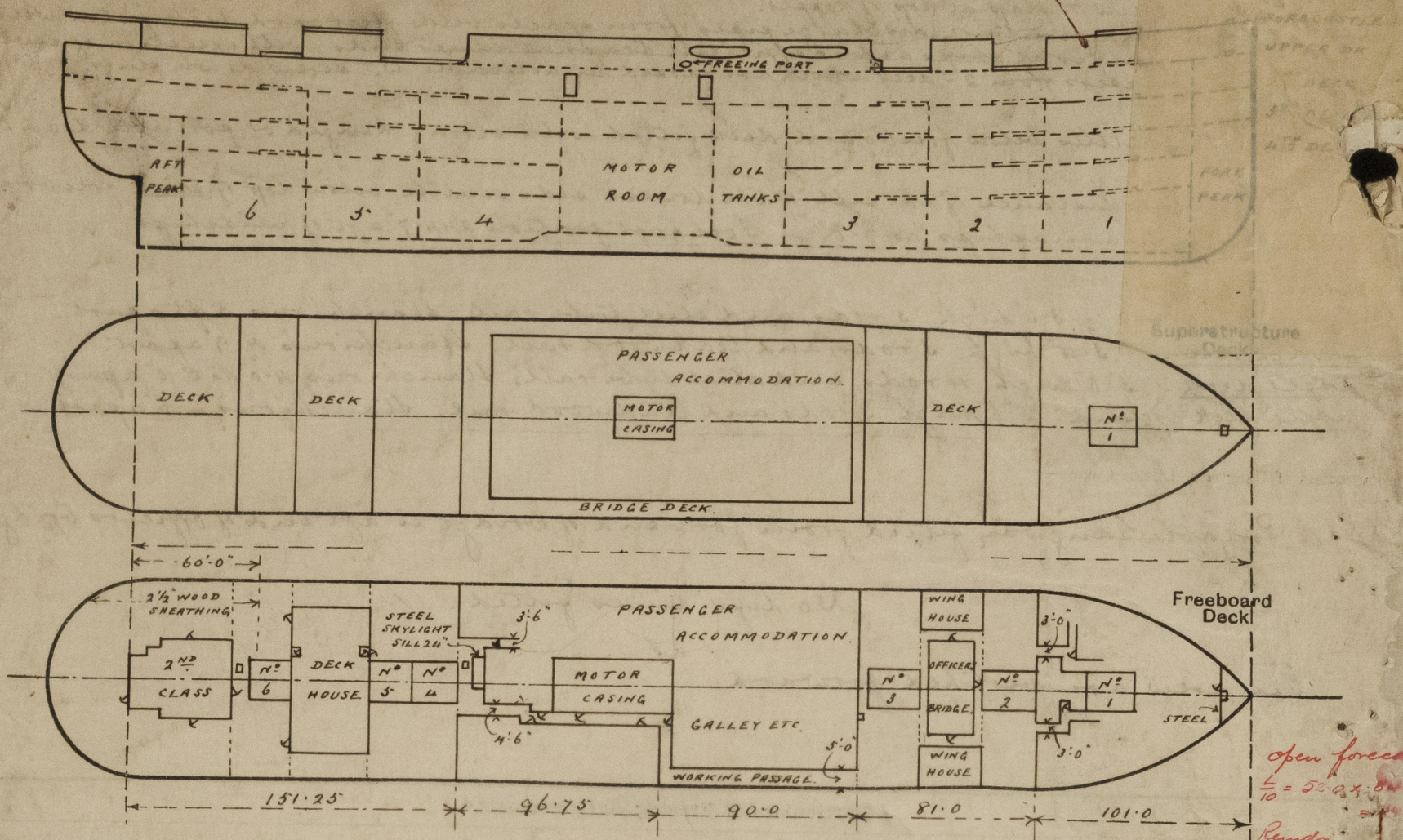
Particulars of Superstructures, Trunks, Casings, Deckhouses.

	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	30	30	5' x 2½" L	29"	None	6'-0" x 2'-7"	6"	8'-6"
Bridge, Forward Bulkhead	44	40	9½ x 3½ x 50 L 9 x 3½ x 38 L	30"	Lugs	5'-0" Alleyway	None	8'-6"
Forecastle Bulkhead	30	30	3½ x 3 x 3½	30"	None	3½" wide Alleyways	11"	8'-0"
Trunk, Aft	—	—	—	—	—	—	—	—
Trunk, Forward	—	—	—	—	—	—	—	—
Exposed Machinery Casings on Freeboard or Raised Quarter Decks ...	—	—	—	—	—	—	—	—
Exposed Machinery Casings on Superstructure Decks	—	—	—	—	—	—	—	—
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	50	25	3½ x 2½ x 40	27"	Top - 20 beams Bottom - None	6'-0" x 3'-2" 6'-0" x 2'-3"	10"	8'-6"
Deckhouses on Flush Deck Ships ...	—	—	—	—	—	—	—	—

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

Poop Bulkhead	
Raised Quarter Deck Bulkhead ...	
Bridge, After Bulkhead	Hinged teakwood door on port side. - Open Alleyway on starboard side
Bridge, Forward Bulkhead	No openings in bulkhead. - Open Alley on starboard side
Forecastle Bulkhead	Open Alleyways. No closing appliances.
Exposed Machinery Casings on Freeboard or Raised Quarter Decks ...	
Exposed Machinery Casings on Superstructure Decks	
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	Hinged teakwood doors manipulated from both sides.

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:—



Deck sheathing
Forecastle & Bridge decks sheathed with 2 1/2" pitch pine.
Upper deck where exposed sheathed with 2 1/2" pitch pine from stern to 60 ft forward of A.P. Remainder coated with 1 1/4" asphalt.
Upper deck where not exposed sheathed with 2 1/2" pitch pine.

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

Entrances to spaces below freeboard deck.
Inside forecabin: Two with teakwood doors and 12" sills.
Deckhouse in forward well: One each side with hinged teakwood doors and 12" sills.
One at fore end with hinged steel door and 12" sill.
Working passage: One to galley &c with hinged steel door & 12" sill. Two on starboard side and refrigerating machinery with hinged teakwood doors and 10" sills.
Deck house between N° 5 & 6 hatchways: One at fore end to N° 5 hold with hinged teakwood door & 12" sill and an inner steel door with 6" sill. Two at aft end with hinged teakwood doors and 12" sills. One to tunnel at aft end with hinged steel door and 12" sill.
2nd Class Deckhouse: One each side and one at fore end with hinged teakwood doors and 10" sills. One at aft end to steering gear with hinged teakwood door and 10" sill protected by hinged steel storm door on outside.
All doors operated from both sides except door to Tunnel which is operated from inside only.

Small hatchways
Forecabin deck: Hatch to fore peak 3'0" x 3'0". Coaming 8" x 36 with steel hinged w.T. cover.
Upper deck: Hatch to fore peak 3'6" x 3'8". Angle coaming & wood cover. No battening down arrangements fitted.
Access hatches to N° 3, 5, & 6 holds 2'6" to 3'0" x 1'10". Coamings 2'6" x 36. Wood covers and tarpaulins &c fitted.

Vessel examined afloat & survey confined to Freeboard and Damage.

Builder's name and yard number Harland & Wolff Ltd. N° 751

Names of sister ships "Highland Chieftain", "Highland Brigade", "Highland Princess" & "Highland Patriot"

Owners Nelson Steam Nav. Co Ltd. Royal Mail Lines Ltd

Fee £ 17 : 0 : 0 Received by me

13/6/32



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