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(For London Office only.)

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

Computation of Freeboard for Steamer, Sailing Ship, Tanker

having *Forecastle and Bridge*Port of Survey *London*

(Type of Superstructures.)

Last

Date of Survey *22nd June 1932*

Ship's Name

HIGHLAND CHIEFTAIN

Nationality and Port of Registry

British
Belfast

Official Number

148161

Gross Tonnage

14135

Date of Build

*1929-1*Name of Surveyor *James D. Butler*Moulded Dimensions: Length *520.0* Breadth *69.0* Depth *43.75*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*
with freeboard

Depth for Freeboard (D)

Moulded depth ... *43.75*Stringer plate ... *.04*

Sheathing on exposed deck

 $T \left(\frac{L-S}{L} \right) = .12 \times .6197 = .07$ Depth for Freeboard (D) = *43.86*

Depth correction

(a) Where D is greater than Table depth

(D-Table depth) R =

 $(43.86 - 34.66) 3 = +27.60$

(b) Where D is less than Table depth (if allowed)

(Table depth-D) R =

If restricted by superstructures ☒

Round of Beam correction

Moulded Breadth (B) *69.0*Standard Round of Beam = $\frac{B \times 12}{50} = 16.56$ Ship's Round of Beam = *6*Difference *10.56*

Restricted to

Correction = $\frac{\text{Diff}}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{10.56}{4} \times .7750 = +2.05$

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 open	<i>96.75</i>	<i>48.37</i>	<i>8'-6"</i>	<i>+2 1/2 wood</i>	<i>48.37</i>
" overhang aft ...					
" overhang forward					
Deck enclosed open	<i>101.00</i>	<i>68.60</i>	<i>8'-0"</i>	<i>+2 1/2 wood</i>	<i>68.60</i>
" overhang ...					
Trunk aft ...					
" forward ...					
Tonnage opening aft ...					
" forward					
Total ...	<i>197.75</i>	<i>116.97</i>			<i>116.97</i>

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) $11.25 + (3.02 \times \frac{.093}{.20}) = 12.65\%$ Deduction = $42.00 \times .1265 = -5.31$

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ...	<i>62.00</i>	<i>1</i>	<i>62.00</i>	<i>45.00</i>	<i>45.00</i>	<i>45.00</i>	<i>1</i>	<i>45.00</i>	<i>45.00</i>
L from A.P. ...	<i>27.59</i>	<i>4</i>	<i>110.36</i>	<i>18.56</i>	<i>18.56</i>	<i>18.56</i>	<i>4</i>	<i>74.24</i>	<i>74.24</i>
L " ...	<i>6.82</i>	<i>2</i>	<i>13.64</i>	<i>4.63</i>	<i>4.63</i>	<i>4.63</i>	<i>2</i>	<i>9.26</i>	<i>9.26</i>
Amidships ...	<i>✓</i>	<i>4</i>	<i>✓</i>	<i>✓</i>	<i>✓</i>	<i>✓</i>	<i>4</i>	<i>✓</i>	<i>✓</i>
L from F.P. ...	<i>13.64</i>	<i>2</i>	<i>27.28</i>	<i>11.33</i>	<i>11.33</i>	<i>11.33</i>	<i>2</i>	<i>22.66</i>	<i>22.66</i>
L " ...	<i>55.18</i>	<i>4</i>	<i>220.72</i>	<i>45.41</i>	<i>45.41</i>	<i>45.41</i>	<i>4</i>	<i>181.64</i>	<i>181.64</i>
P. ...	<i>124.00</i>	<i>1</i>	<i>124.00</i>	<i>110.00</i>	<i>110.00</i>	<i>110.00</i>	<i>1</i>	<i>110.00</i>	<i>110.00</i>
Total ...			<i>558.00</i>					<i>442.80</i>	

Mean actual sheer aft = *Deficient*Mean actual sheer forward = *Deficient (.8480)*Length of enclosed superstructure forward of amidships = *50*

FORWARD		SHEERS		aft of	
STANDARD	ACTUAL	STANDARD	ACTUAL	STANDARD	ACTUAL
<i>13.64</i>	<i>3</i>	<i>40.92</i>	<i>11.33</i>	<i>3</i>	<i>33.99</i>
<i>55.18</i>	<i>3</i>	<i>165.54</i>	<i>45.41</i>	<i>3</i>	<i>136.23</i>
<i>124.00</i>	<i>1</i>	<i>124.00</i>	<i>110.00</i>	<i>1</i>	<i>110.00</i>
		<i>330.46</i>			<i>280.22</i>

Correction = $\frac{\text{Difference between sums of products}}{18} = \frac{115.2}{18} = 6.4$ $(.75 - \frac{S}{2L}) = \frac{115.2}{18} (.75 - .1901) = +3.58$

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 = *44.00*Summer freeboard = *15.40*Moulded draught (d) = *28.60*

Deduction for Tropical freeboard and addition for

Winter freeboard = $\frac{d}{4}$ inches = $7.15 = 7\frac{1}{4}$

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 $= 7.42$ $= 7\frac{1}{2}$

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient $\frac{.765 + .68}{1.36} = \frac{1.445}{1.36}$ $\frac{1.445}{1.36} = 1.0625$ 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 ... *1.66* ☒Other corrections, scantlings, etc. and ... *40.31* ☒

correspond to approved moulded

winter draught of *28'-0"*Summer Freeboard = *184.75*

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

Tropical Fresh Water Line above Centre of Disc ... *14 3/4*Fresh Water Line " " ... *7 1/2*Tropical Line " " ... *7 1/4*Winter Line below " " ... *7 1/4*Winter North Atlantic Line " " ... *7 1/4*Tropical Fresh Water Freeboard ... *14'-2"*Fresh Water " " ... *14'-9 1/4"*Tropical " " ... *14'-9 1/2"*Winter " " ... *16'-0"*Winter North Atlantic " " ... *16'-0"*

21 JUN 1932

Passenger line to be marked $7\frac{1}{4}$ below the centre of the discLloyd's Register
MARKING FORM
11 JAN 1933
RECEIVED

PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS									
Description of Hatchway			Forecastle	N°1	N°2	N°3	N°4	N°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	{ 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"	
	Stiffeners	...	None	None	None	None	None	None	
	Brackets, Stays	...	None	None	None	None	None	None	
HATCH BEAMS	Number	...	3	2	5	5	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 .50	3 1/2 x 3 x .62	3 1/2 x 3 x .62	3 1/2 x 3 x .62	3 1/2 x 3 x .62	3 1/2 x 3 x .62	
	Bearing Surface	...	3"	3"	3"	3"	3"	3"	
FORE AND AFTERS	Number	...							
	Spacing	...							
	Unsupported Lengths	...							
	Scantling* and Sketch	...			None				
	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	
<p>*Are wood fore and afters steel shod at all bearing surfaces? <i>yes</i></p> <p>Are battens and wedges efficient and in good condition? <i>yes</i></p> <p>Are tarpaulins in good condition and in accordance with rule requirements? <i>yes</i></p> <p>Are lashings provided in accordance with rule requirements? <i>yes</i></p> <p><i>Locking bar fitted to 2 hatchways small hatchways at Pers 7/26/42 see page 4</i></p>									

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. ✓
to space
 For particulars of Entrances 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 40". Three to hold - two at 18" dia and one at 24" dia. Coamings 2'9" x 44". ✓
 Upper deck: Six to hold 24" dia. Coamings 10'5" x 44" efficiently supported. Four to hold 24" dia. Coamings 2'6" x 44". Fifteen 12" x 3" to 15" x 4". Coamings 2'6" to 3'0" x 30" led to below freeboard deck. ✓
 Bridge deck: Fourteen 12" x 3" to 15" x 4". Coamings 2'6" x 30" led to below freeboard deck. ✓
 Officers Bridge deck: Two to hold 24" dia. Coamings 2'9" x 44". ✓
 Deck house aft: Two to hold 18" dia. Coamings 2'4" x 38". Three to Green Comp. 12" dia. Coamings 2'4" x 38". ✓
 Two fan vents to Tunnel 15" sill. ✓ Closing appliances fitted to hold vents only. ✓
 Particulars of Air Pipes in exposed positions on freeboard, raised quarter, or superstructure decks:—
 Forecastle deck: One to fore peak 2'0" x 4 1/2" dia. ✓ Five to D/B tanks 2'4" to 2'6" x 3" to 4 1/2" dia. ✓
 One to duct keel 12'0" x 4" dia efficiently supported. ✓
 Upper deck: Fifteen to D/B tanks & aft peak 1'6" to 2'3" x 3" to 4 1/2" dia. ✓
 Bridge deck: Twelve to D/B tanks & 1'10" to 2'0" x 2 1/2" to 4" dia. ✓
 Efficient closing appliances fitted to above air pipes.

Particulars of Gangway Cargo and Coaling Ports:—

Two w.T. gangway doors between 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 collisional 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. Efficient traps at inner ends, with exception of several collisional 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'-8". Fore & aft position 244'-7" aft of midships.

Particulars of Guard Rails:—

Forecastle deck: 3'-6" high, 5 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 at Bow. 7/4/12 The crew are berthed forward.

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 ...	✓	✓	Open rails	✓	✓	✓
Forward Well Starboard side only	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.

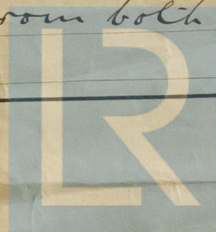
Additional area where sheer is less than standard. ✓

Particulars of Superstructures, Trunks, Casings, Deckhouses.

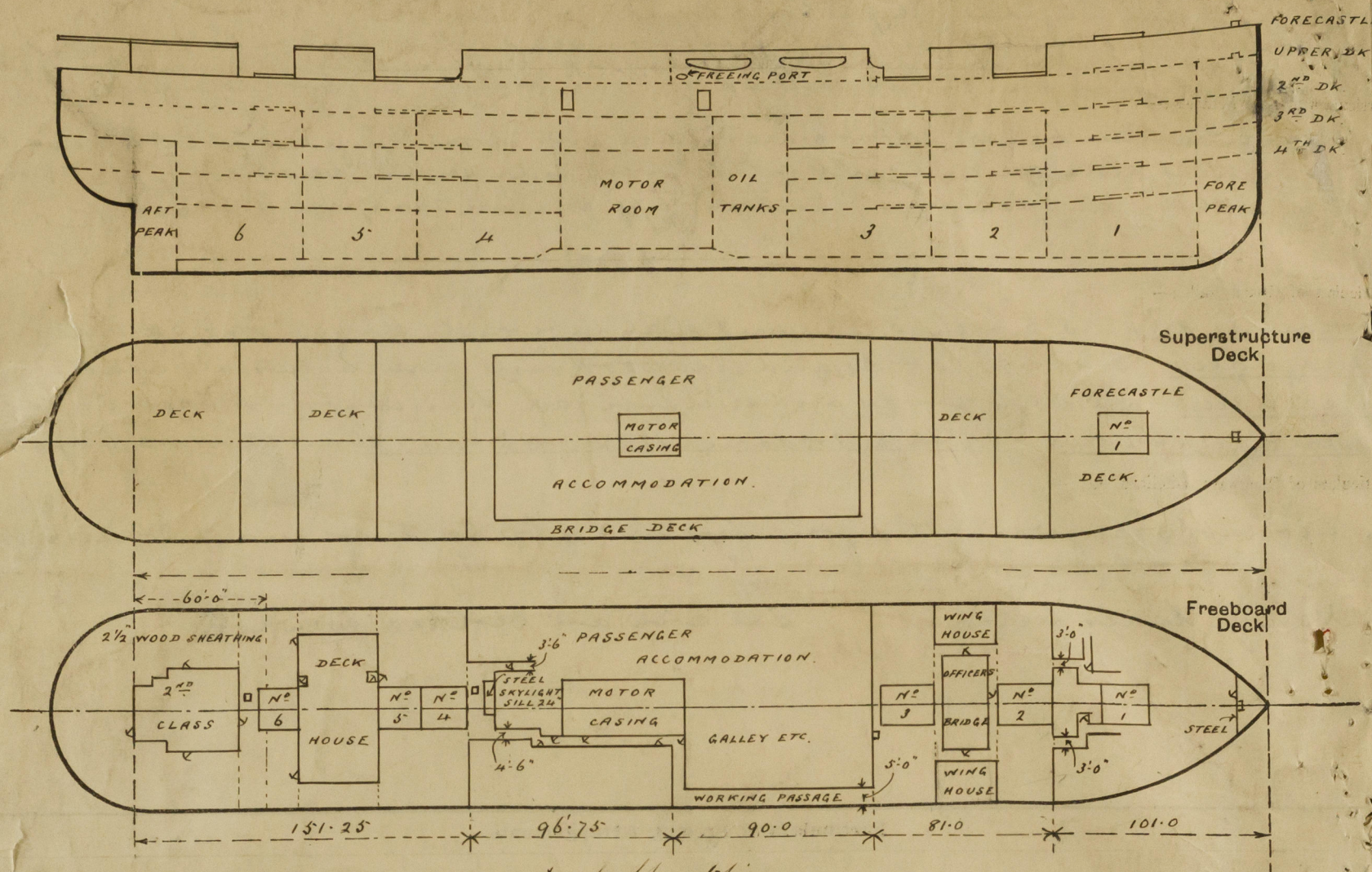
	Coaming	Plating	Stiffeners	Spacing	End Attachments of Stiffeners	Size of Openings	Height of Sills	Height of Casings
Poop Bulkhead ...	—	—	—	—	—	—	—	—
Raised Quarter Deck Bulkhead ...	—	—	—	—	—	—	—	—
Bridge, After Bulkhead ...	30 ✓	30	5" x 2 1/2" L	29" ✓	None	6'-0" x 2'-7"	6" ✓	8'-6" ✓
Bridge, Forward Bulkhead ...	44 ✓	40	9 1/2" x 3 1/2" x 50" L 9" x 3 1/2" x 38" L	30" ✓	Lugs	5'-0" Alleyway	None	8'-6" ✓
Forecastle Bulkhead ...	30 ✓	30	3 1/2" x 3" x 3/8"	30" ✓	None	3'-0" Alleyway	11" ✓	8'-0" ✓
Trunk, Aft ...	—	—	—	—	—	—	—	—
Trunk, Forward ...	—	—	—	—	—	—	—	—
Exposed Machinery Casings on Freeboard or Raised Quarter Decks ...	—	—	—	—	—	—	—	—
Exposed Machinery Casings on Superstructure Decks ...	—	Not exposed	—	—	—	—	—	—
Machinery Casings within Superstructures not fitted with Class I Closing Appliances ...	50 ✓	25 ✓	3 1/2" x 2 1/2" x 40"	27" ✓	Top - To beams 6'-0" x 3'-2" Bottom - None	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 starboard side
Bridge, Forward Bulkhead ...	No openings in bulkhead. Open Alleyway starboard side
Forecastle Bulkhead ...	Open Alleyways. No closing appliances.
Exposed Machinery Casings on Freeboard or Raised Quarter Decks ...	✓
Exposed Machinery Casings on Superstructure Decks ...	Not exposed.
Machinery Casings within Superstructures not fitted with Class I Closing Appliances ...	Hinged teakwood doors operated 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 coaling ports, and any other openings, etc., which would affect the seaworthiness of the ship are to be shewn 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 forecastle:— Two with teakwood hinged 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 saloon with hinged steel door and 12" sill. Two on starboard side to stairways with hinged teakwood doors and 12" sills. Two on port side to motor room and refrigerating machinery with hinged teakwood doors and 10" sills. ✓

Deckhouse between N° 5 & 6 hatchways:— One at fore end to N° 5 hold with hinged teakwood doors and 12" sills, and an inner steel door with 6" sill. Two at aft end with hinged teakwood doors and 12" sills. One at aft end to tunnel 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 the door to Tunnel which is operated from inside only. ✓

— Small hatchways —

Forecastle deck:— Hatch to fore peak 3'0" x 3'0" Coaming 8" x 36 with steel hinged N.T. cover. ✓

Upper deck:— Hatch to fore peak 3'6" x 3'3" Angle coaming and wood cover. No battening down arrangements fitted. ✓

Access hatches to N° 5, 5, & 6 holds 2'6" to 3'0" x 1'10". Coamings 2'6" x 36. Wood covers and tarpaulins refitted. ✓

The vessel examined afloat and in dry dock, and the S.L. N° 1 has been partly held by the examination of bottom and rudder. ✓

Builder's name and yard number Harland & Wolff Ltd. N° 806

Names of sister ships "Highland Monarch", "Highland Brigade", "Highland Princess" & "Highland Patriot".

Owners Nelson & Co Ltd. Royal Mail Line Ltd.

Fee £ 17 : 0 : 0 Received by me

23/6/32

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