

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

GLASGOW REPORT No. 54894

Computation of Freeboard for Steamer, Sailing Ship, Tanker
having Roof Bridge & Forecastle

(Type of Superstructures.)

Ship's Name "LOCH LOMOND" Nationality and Port of Registry Brit. Glasgow Gross Tonnage 5450 Date of Build 1934

Moulded Dimensions: Length 412.0 Breadth 56.0 Depth 30.7
Moulded displacement at moulded draught = 85 per cent. of moulded depth 12970 tons
Coefficient of fineness for use with Tables .757

Port of Survey Glasgow
Date of Survey while building
Name of Surveyor A.W. Paterson
Particulars of Classification +100 A1 Contemp

Depth for Freeboard (D)	Depth correction	Round of Beam correction
Moulded depth <u>30.58</u>	(a) Where D is greater than Table depth (D-Table depth) R = <u>(30.62 - 27.47) 3 = 9.45</u>	Moulded Breadth (B) <u>56.0</u>
Stringer plate <u>.50</u> <u>.04</u>	(b) Where D is less than Table depth (if allowed) (Table depth-D) R = <u>✓</u>	Standard Round of Beam = $\frac{B \times 12}{50} = \frac{56 \times 12}{50} = 13.44$
Sheathing on exposed deck <u>✓</u> $T \left(\frac{L-S}{L} \right) =$ <u>✓</u>	If restricted by superstructures	Ship's Round of Beam = <u>13.5</u>
Depth for Freeboard (D) = <u>30.62</u>		Difference <u>.06</u>
		Restricted to
		Correction = $\frac{\text{Diff}}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{.06}{4} \times \left(1 - \frac{.5}{56} \right) = .01$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)	
Poep enclosed	<u>41.83</u>	<u>41.83</u>	<u>10'</u>	<u>✓</u>	<u>41.83</u>	Standard Height of Superstructure <u>7.5</u>
" overhang	<u>.29</u>	<u>.14</u>			<u>.14</u>	" " R.Q.D. <u>✓</u>
R.Q.D. enclosed	<u>✓</u>					Deduction for complete superstructure <u>42</u>
" overhang	<u>✓</u>					Percentage covered $\frac{S}{L} = \frac{55.26}{56} = 98.8$
Bridge enclosed	<u>140.12</u>	<u>140.12</u>	<u>11'-3"</u>	<u>✓</u>	<u>140.12</u>	" " $\frac{S_1}{L} = \frac{54.978}{56} = 98.2$
" overhang aft	<u>.29</u>	<u>.22</u>			<u>.22</u>	" " $\frac{E}{L} = \frac{54.978}{56} = 98.2$
" overhang forward	<u>.29</u>	<u>.14</u>			<u>.14</u>	Percentage from Table, Line A. <u>✓</u>
F'cle enclosed <u>eggs</u>	<u>44.54</u>	<u>43.239</u>	<u>9'-0"</u>	<u>✓</u>	<u>43.239</u>	(corrected for absence of forecastle (if required))
" overhang	<u>1.54</u>	<u>.77</u>			<u>.77</u>	Percentage from Table, Line B. <u>40.98</u>
Trunk aft	<u>✓</u>					(corrected for absence of forecastle (if required))
" forward	<u>✓</u>					Interpolation for bridge less than 2L (if required)
Tonnage opening aft	<u>✓</u>					Deduction = <u>42 + 40.98 = 82.98</u>
" " forward	<u>✓</u>					
Total	<u>227.68</u>	<u>226.47</u>			<u>226.47</u>	

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product	
A.P.	<u>51.2</u>	<u>1</u>	<u>✓</u>	<u>51.20</u>	<u>60</u>	<u>60.00</u>	<u>1</u>	<u>✓</u>	<u>60.00</u>	Mean actual sheer aft = <u>Excess</u>
$\frac{1}{2}$ L from A.P.	<u>22.78</u>	<u>4</u>	<u>✓</u>	<u>91.12</u>	<u>27</u>	<u>27.00</u>	<u>4</u>	<u>✓</u>	<u>108.00</u>	Mean actual sheer forward = <u>Excess</u>
$\frac{2}{3}$ L "	<u>5.63</u>	<u>2</u>	<u>✓</u>	<u>11.26</u>	<u>6.5</u>	<u>6.50</u>	<u>2</u>	<u>✓</u>	<u>13.00</u>	Mean standard sheer forward
Amidships		<u>4</u>					<u>4</u>			Length of enclosed superstructure forward of amidships = <u>4.15</u>
$\frac{2}{3}$ L from F.P.	<u>11.26</u>	<u>2</u>	<u>✓</u>	<u>22.52</u>	<u>14.25</u>	<u>14.25</u>	<u>2</u>	<u>✓</u>	<u>28.50</u>	" " aft of " = <u>7.15</u>
$\frac{1}{2}$ L "	<u>45.56</u>	<u>4</u>	<u>✓</u>	<u>182.24</u>	<u>58.25</u>	<u>58.25</u>	<u>4</u>	<u>✓</u>	<u>233.00</u>	
F.P.	<u>10.24</u>	<u>1</u>	<u>✓</u>	<u>102.40</u>	<u>126.5</u>	<u>126.50</u>	<u>1</u>	<u>✓</u>	<u>126.50</u>	
Total				<u>460.74</u>					<u>569.00</u>	
Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{108.26}{18} \left(.75 - \frac{27.63}{2 \times 56} \right) = -2.85$										
If limited on account of midship superstructure. <u>✓</u>										
If limited to maximum allowance of $1\frac{1}{2}$ ins. per 100 ft. <u>✓</u>										

Deduction for Tropical Freeboard.

Addition for Winter and Winter North Atlantic Freeboard.

Depth to Freeboard Deck = 30.62
Summer freeboard = 5.75
Moulded draught (d) = 24.87

Deduction for Tropical freeboard and addition for

Winter freeboard = $\frac{d}{4}$ inches = 6.22Addition for Winter North Atlantic Freeboard (if required) = ✓

Deduction for Fresh Water.

Displacement in salt water at summer load water line

 $\Delta =$ 12410

Tons per inch immersion at summer load water line

T = 46.2Deduction = $\frac{\Delta}{40T}$ inches= 6.726 3/4

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient = $\frac{257+681}{136} \frac{1432}{136} =$

	+	-
Depth Correction	<u>9.45</u>	<u>1</u>
Deduction for superstructures	<u>17.22</u>	<u>✓</u>
Sheer correction	<u>2.85</u>	<u>✓</u>
Round of Beam correction	<u>.01</u>	<u>✓</u>
Correction for Thickness of Deck amidships	<u>✓</u>	<u>✓</u>
Other corrections, scantlings, etc.	<u>✓</u>	<u>✓</u>
Summer Freeboard =	<u>68.88</u>	<u>✓</u>

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

Tropical Fresh Water Line above Centre of Disc ... 13
Fresh Water Line " " ... 6 3/4
Tropical Line " " ... 6 1/4
Winter Line below " " ... 6 1/4
Winter North Atlantic Line " " ... ✓

Tropical Fresh Water Freeboard ... 4 - 7 3/4
Fresh Water " " ... 5 - 2
Tropical " " ... 5 - 2 1/2
Winter " " ... 6 - 3
Winter North Atlantic " " ... ✓

PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS									
Description of Hatchway	upper dk	upper dk	upper dk	Bridge dk	upper dk	upper dk	Poop Hatch		
Dimensions of Hatchway	N ^o 1	N ^o 2	N ^o 3	N ^o 3	N ^o 4	N ^o 5			
	29'-3" x 22'	33'-3" x 22'	28'-6" x 22'	26'-1 1/2" x 20'	30'-10 1/2" x 22'	30'-10 1/2" x 22'	14' x 16'		
COAMINGS									
Height above Deck	3'-0"	3'-6"		2'-6"	3'-0"	3'-0"	2'-6"		
Thickness	.48	.48	9" B.A.	.44	.48	.48	.44		
Stiffeners	7 B.A.	7 B.A.		7" B.A.	7 B.A.	7 B.A.	✓		
Brackets, Stays	2 @ 2'	3 @ 2'	✓	2 @ 2'	3 @ 2'	3 @ 2'	✓		
HATCH BEAMS									
Number	6	6	5	4	5	5	2		
Spacing	4'-10 1/2"	4'-9"	4'-9"	5'-2 3/4"	5'-1 3/4"	5'-1 3/4"	4'-8"		
Scantling and Sketch	18 3/4 x 36 angles	18 1/4 x 36	21 x 38	13 3/4 x 34	19 1/2 x 36	19 1/2 x 36	11 x 30		
Bearing Surface	5 x 3 x 44 8 1/2"	5 x 3 x 44	5 x 3 1/2 x 48	4 x 3 x 44	5 x 3 x 44	5 x 3 x 44	3 1/2 x 3 x 42		
FORE AND AFTERS									
Number	✓	✓	✓	✓	✓	✓	✓		
Spacing									
Unsupported Lengths									
Scantling* and Sketch									
Bearing Surface									
HATCH COVERS									
Material	W.P.								
Thickness	3"								
How fitted	F.Y.A.								
Bearing Surface	3"								
Spacing of Cleats	2'-0"								
Number of Tarpaulins	3	3	1	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*

Particulars of fiddley, funnel and ventilator coamings :—

Stakehold gratings covered by strong steel hinged covers
7 ~~funnel~~ + funnel ventilators in good conditions. Engine skylight
of steel + strongly constructed.

Particulars of Flush Bunker Scuttles :—

none

Particulars of Companionways :—

Steel companion 4'-0" x 2'-0" x 4'-8" high on poop leading to steering gear comp't., strongly constructed with hinged steel door 3'-3" x 18 1/2", manipulated from both sides. Sill 1 1/2".

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

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

one	vent on fore	9" diam opening	36" x 32"	to peak stove
two	" "	21" "	36" x 40"	holds
six	" bridge	21" "	30" x 40"	"
two	" "	14" "	30" x 36"	bunkers
one	" pump	6" "	30" x 30"	to steering, 9

All vents constructed in accordance with Rules & coverings closed with plugs & canvas covers

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

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

one	air pipe on fore	18" high x 4"	drain from fore peak
"	" " " "	" " x 4	" " D. B.
two	" " " " fwd. dk	36 " x 4 "	" " " "
two	" " " " " "	36 " x 3 "	" " " "
four	" " " " bridge	18 " x 4 "	" " " "
two	" " " " " "	18 " x 3 "	" " " "
one	" " " " poop	18 " x 4 "	" " aft peak.

Air pipes fitted
with canvas covers.

Particulars of Gangway Cargo and Coaling Ports:—

none

Particulars of Scuppers and Sanitary Discharge Pipes — Three scuppers from bridge space & one from poop all p.s. led above and below foreboard and deck with y.m. storm valves at ship's side.
No sanitary discharges below fore deck.

Particulars of Side Scuttles:

Side scuttles in fore & steering gear compartment in poop fitted with hinged sidelights.

All scuttles of substantial construction.

Particulars of Guard Rails:—

Guard rails on fore & poop and ends of bridge 3'-0" high, having two rods & stanchions spaced 5'-0" apart. Steel bulwark 3'-3" high at bridge sides efficiently constructed & supported. Steel bulwark on fore deck in wells 3'-8" high, plating .30 with rail bar 7x3 1/2 x .50 B.A. Stays of 7x3x40 B.A. in conjunction with 3x3x40 bulwark stiffeners spaced 4'-9" apart, attached to bulk by 6"x6" tee bar in way of beams.

Particulars of Gangways, Lifelines, etc.:—

Suitable arrangements provided in fore & after wells for lifelines.

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	90.25	3'-8"	9'-0" x 9" 7'-0" x 9"	2 2	24' ✓	18.05 ✓
Forward Well	95.25	3'-8"	9'-6" x 9" 7'-0" x 9"	2 2	24.75 ✓	19.05 ✓

State position of each freeing port } After Well:— to fore end of port 12'-25'-3" — 46'-0" — 76'-0"
(F. and A. position and height above deck edge) } Forward Well:— to aft end of port 12'-26'-6" — 49'-6" — 68'-0"
State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such:—
no rods etc. 14" sill

Additional area where sheer is less than standard.

Particulars of Superstructures, Trunks, Casings, Deckhouses.

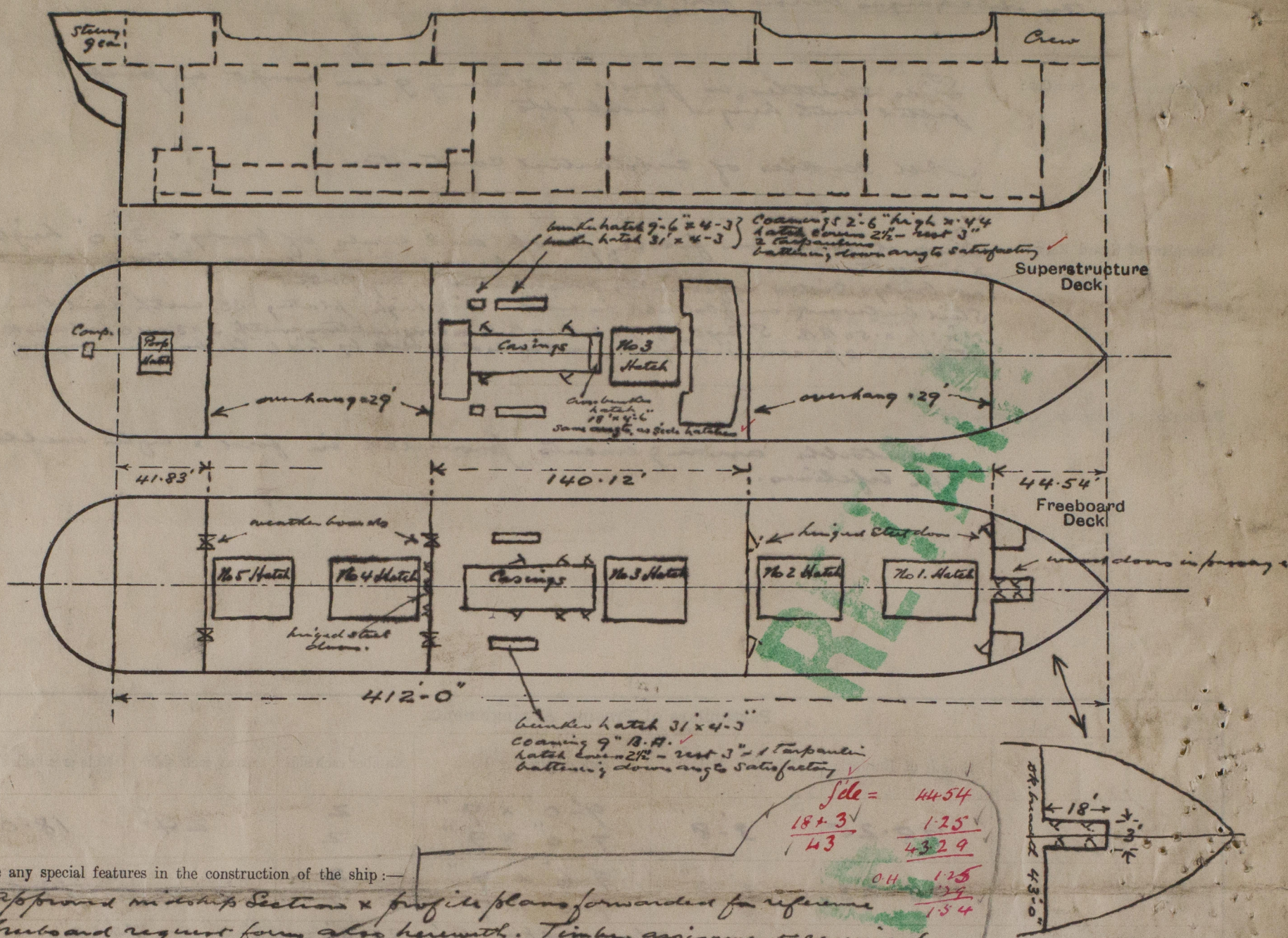
	Coaming	Plating	Stiffeners	Spacing	End Attachments of Stiffeners	Size of Openings	Height of Sills	Height of Casings
Poop Bulkhead	✓	.38	6x3x32 ^{B.A.} ✓	30" ✓	lugged	5'-6"x3'-3"	18"	
Raised Quarter Deck Bulkhead ...	✓							
Bridge, After Bulkhead	✓	.30	5x3x30 ^L ✓	30	✓	5'-6"x3'-3" 5'-0"x2'-0"	18"	
Bridge, Forward Bulkhead	✓	.44	10x3 1/2 x 47 ^{B.A.} ✓	30" ✓	lugged	5'-6"x3'-3"	18" ✓	
Forecastle Bulkhead	✓	.30	4x3x32 ^L ✓	30"	✓	4'-9"x2'-0"	18"	
Trunk, Aft	✓							
Trunk, Forward	✓							
Exposed Machinery Casings on Free-board or Raised Quarter Decks ...	✓							
Exposed Machinery Casings on Superstructure Decks ... ..	.36	.30	3 1/2 x 3 x 34 ^L ✓	31"	bracketed top	5'-0"x2'-0"	18"	7'-6"
Machinery Casings within Superstructures not fitted with Class I Closing Appliances ... ..	.36	.30	do. ✓	do.	do.	7'-0"x5'-6" 5'-0"x2'-0"	18"	11'-3"
Deckhouses on Flush Deck Ships ...	✓							

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

Poop Bulkhead	3" weather boards in riveted channels full height ✓
Raised Quarter Deck Bulkhead ...	✓
Bridge, After Bulkhead	3" weather boards in riveted channels full height and steel hinged doors (manipulated from both sides) ✓
Bridge, Forward Bulkhead	hinged steel w.t. doors. (manipulated from both sides)
Forecastle Bulkhead	hinged steel doors at front — hinged 1 1/2" wood panel doors in passage (manipulated from both sides)
Exposed Machinery Casings on Free-board or Raised Quarter Decks ...	✓
Exposed Machinery Casings on Superstructure Decks	hinged steel doors. (manipulated from both sides)
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	hinged steel doors. do.
Deckhouses on Flush Deck Ships ...	✓

Loch Lomond

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:—

Approved midship sections & profile plans forwarded for reference. Freeboard and request form also herewith. Timbers assignment required. Vessel to be engaged in general trade. Prelim. plan has been assigned (S.P. No. 54054)

Draught	Est. Ship	Tons per inch
24'	11847	45.85
25'	12399	46.2
26'	12953	46.53

- For timber deck cargoes (in way of wells)
- (1) centre girders in double bottoms from frame 38 to 136 w.t. (over half length of well).
 - (2) Bulwarks of substantial construction (See particulars on page 3)
 - (3) No steering rods & chains. Secondary means of steering, relieving tackle led to poop winch. (Steering gear in poop.)
 - (4) $\frac{3}{8}$ " Eye plates for lashings riveted to sheer strake, 9'-0" apart - 6'-6" from first eye plate to end bulkheads.
 - (5) Deck sockets for uprights composed of $3\frac{1}{2} \times \frac{5}{8}$ " plates welded to stringers also band of $2\frac{1}{2} \times \frac{1}{2}$ " flat iron bolted to rail bars, same spacing as eye plates.

Builder's name and yard number

D. & W. Henderson & Co. Ltd. No. 931M

Names of sister ships

Owners

(Mgns.) MacLay & McIntyre Ltd.

Fee £

16 : 0 : 0

Received by me

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