

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

10.932.

40409

Computation of Freeboard for Steamer, ~~Sailing Ship~~, Tanker
having Raised Quarter Deck, Bridge & Forecastle.

(Type of Superstructures.)

Ship's Name "KATHLEEN"	Nationality and Port of Registry <u>British</u> <u>Belfast.</u>	Official Number <u>113519</u>	Gross Tonnage <u>738</u> ✓	Date of Build <u>1902-4</u>
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Moulded Dimensions: Length 200.0' Breadth 30.24' Depth 14.25'
Moulded displacement at moulded draught = 85 per cent. of moulded depth 1468 tons
Coefficient of fineness for use with Tables 701

Port of Survey Belfast
Date of Survey August - Sept. 1932.
Name of Surveyor J.D. Shildon
Particulars of Classification +100A1
S.S. Rel. 2nd Nov. 9.27

Depth for Freeboard (D) Moulded depth <u>14.25'</u> Stringer plate <u>.044'</u> Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$ Depth for Freeboard (D) = <u>14.29'</u>	Depth correction (a) Where D is greater than Table depth (D - Table depth) R = $(14.29 - 13.33) 1.538 = + 1.48"$ (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) <u>30.24'</u> Standard Round of Beam = $\frac{B \times 12}{50} =$ <u>7.26"</u> Ship's Round of Beam = <u>7.2"</u> Difference <u>.24"</u> Restricted to Correction = $\frac{\text{Diff}^a}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{.24}{4} \times .2808 = - .02"$
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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>103.0'</u>	<u>103.00</u>	<u>3.92'</u>	<u>✓</u>	<u>103.00</u>
" overhang ...	✓				
Bridge enclosed... ..	<u>12.83'</u>	<u>12.83</u>	<u>7.25'</u>	<u>✓</u>	<u>12.83</u>
" overhang aft ...	✓				
" overhang forward ...	✓				
Forecastle enclosed ...	<u>36.00'</u>	<u>28.00</u>	<u>7.04'</u>	<u>✓</u>	<u>28.00</u>
" overhang ...	✓				
Trunk aft ...	✓				
" forward ...	✓				
Tonnage opening aft ...	✓				
" " forward ...	✓				
Total ...	<u>151.83</u>	<u>143.83</u>			<u>143.83</u>

Standard Height of Superstructure 6.00
 " " R.Q.D. 3.667
 Deduction for complete superstructure 26.00
 Percentage covered $\frac{S}{L} = 75.92\%$
 " " $\frac{S_1}{L} = 71.92\%$
 " " $\frac{E}{L} = 71.92\%$
 Percentage from Table, Line A.
 (corrected for absence of forecastle (if required))
 Percentage from Table, Line B. 65.36%
 (corrected for absence of forecastle (if required))
 Interpolation for bridge less than 2L (if required)
 Deduction = 26.00 × .6556 = - 16.99"

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ...	<u>30.00</u>	1		<u>30.00</u>	<u>26.2"</u>	<u>26.50</u>	1		<u>29.50</u>
1/4 L from A.P. ...	<u>13.35</u>	4		<u>53.40</u>	<u>12"</u>	<u>11.85</u>	4		<u>52.52</u>
2/4 L " ...	<u>3.30</u>	2		<u>6.60</u>	<u>3"</u>	<u>2.96</u>	2		<u>6.48</u>
Amidships ...		4					4		
3/4 L from F.P. ...	<u>6.60</u>	2		<u>13.20</u>	<u>7.34"</u>	<u>7.70</u>	2		<u>15.40</u>
1/4 L " ...	<u>26.70</u>	4		<u>106.80</u>	<u>31"</u>	<u>30.80</u>	4		<u>123.20</u>
F.P. ...	<u>60.00</u>	1		<u>60.00</u>	<u>67.2"</u>	<u>67.50</u>	1		<u>67.50</u>
Total ...				<u>270.00</u>					<u>294.60</u>

Correction = $\frac{\text{Difference between sums of products}}{18} = \frac{24.60}{18} = 1.367$
 If limited on account of midship superstructure. $.506 \times \frac{179}{200} = - 0.45"$ If limited to maximum allowance of 1 1/2 ins. per 100 ft.

Mean actual sheer aft = Deficient (> .75)
 Mean standard sheer aft
 Mean actual sheer forward = Excess
 Mean standard sheer forward
 Length of enclosed superstructure forward of amidships = .079
 " " aft of " = .500

Deduction for Tropical Freeboard.

Addition for Winter and Winter North Atlantic Freeboard.

Depth to R.Q. Deck = 18.21'
 Summer freeboard = 4.54
 Moulded draught (d) = 13.67'

Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = 3.42 = 3 1/2"

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

Deduction for Fresh Water.

Displacement in salt water at summer load water line

$\Delta = 1700$

Tons per inch immersion at summer load water line

$T = 12$

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

$= \frac{1700}{480} = 3.54 = 3 1/2"$

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient

	+	-
Depth Correction ...	<u>1.48</u>	<u>-</u>
Deduction for superstructures ...	<u>-</u>	<u>16.99</u>
Sheer correction ...	<u>-</u>	<u>0.45</u>
Round of Beam correction ...	<u>-</u>	<u>.02</u>
Correction for Thickness of Deck amidships	<u>-</u>	<u>-</u>
Other corrections, scantlings, etc. ...	<u>47.00</u>	<u>-</u>
	<u>48.48</u>	<u>17.46</u>

Summer Freeboard = 54.48"

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

Tropical Fresh Water Line above Centre of Disc ...	<u>3 1/2"</u>
Fresh Water Line " " ...	<u>3 1/2"</u>
Tropical Line " " ...	<u>3 1/2"</u>
Winter Line below " " ...	<u>3 1/2"</u>
Winter North Atlantic Line " " ...	<u>5 1/2"</u>

Tropical Fresh Water Freeboard ...	<u>4' 6 1/2"</u>
Fresh Water " " ...	<u>3' 11 1/2"</u>
Tropical " " ...	<u>4' 3"</u>
Winter " " ...	<u>4' 3"</u>
Winter North Atlantic " " ...	<u>5' 6"</u>

PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS		No.1	No.2	after peak above hatch	Transverse Hatch below forecastle erection					
Description of Hatchway		Freeboard Deck	Raised Quarter Deck							
Dimensions of Hatchway		42'3" x 16'6"	33'0" x 14'6"	29'2" x 29'2"	24' x 22'					
COAMINGS	Height above Deck	36"	25"	10 1/2"	19"					
	Thickness	50"	50"	30"	30"					
	Stiffeners	50"	50"	30"	30"					
	Brackets, Stays	nil	nil	✓	✓					
		1 each side	3 each side	✓	✓					
HATCH BEAMS	Number	4	3	✓	✓					
	Spacing	9'2" max	8'11" max							
	Scantling and Sketch	7'6" min.	4'6" min.							
		2 all pale 2 1/2" x 10" 2 all pale 1 1/2" x 10" 2 all pale 1 1/2" x 10" 2 all pale 1 1/2" x 10"	1 all pale 3 1/2" x 10" 2 all pale 1 1/2" x 10" 2 all pale 1 1/2" x 10" 2 all pale 1 1/2" x 10"							
	Bearing Surface	3"	3"							
FORE AND AFTERS	Number	3	3	✓	✓					
	Spacing	8'6"	4'0"							
	Unsupported Lengths	9'11" max	8'11" max							
	Scantling and Sketch	centrel D=8" B=5"	centrel D=7 1/2" B=6"							
	Bearing Surface	2 1/2"	2 1/2"							
HATCH COVERS	Material	Canadian Spruce	Canadian Spruce							
	Thickness	2 1/2"	2 1/2"	2 1/2"	2 1/2"					
	How fitted	Transverse	Transverse	3/4"	5/8"					
Spacing of Cleats		23'6" x 26"	23'6" x 26"	20"	18"					
Number of Tarpaulins		3	3	2	2					
*Are wood fore and afters steel shod at all bearing surfaces? no 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? Ring bolts on cargo hatchway.										

Particulars of fiddle, funnel and ventilator coamings:-

Funnel coaming strong, rivetted to casing top.
 Fiddle opening protected by hinged steel covers.
 Fiddle & engine room ventilator coaming strong, rivetted to casing top.
 Engine room skylight of wood, strong, bolted to casing top.
 One ventilator to crew space below raised quarter deck, 5' dia x 8' high x 1/2" thick rivetted to casing top.

Particulars of Flush Bunker Scuttles:-

none

Particulars of Companionways:-

Formed in side of deck house aft giving access from raised quarter deck to crew space below, opening 57' x 23' (17' all) closed by 1 1/2" panelled 1" thick oak wood door (not secured).
 On bridge deck giving access from raised quarter deck to bridge space, companion of steel, opening 55' x 22' (15' all) closed by 1 1/2" panelled 1" thick oak wood door. This companionway is not used & the door is permanently fastened.
 Formed in wheel house giving access from bridge deck to bridge space, opening 59' x 22' (15' all) closed by 1 1/2" panelled 1" thick oak wood door, opening from both sides.
 On foreboard deck below forecastle erection to crew space below, companion of steel, 2 openings 55' x 19 1/2' (16' all) closed by 1 1/2" panelled 3/4" thick pine wood doors. (doors to repair)

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

On raised quarter deck to bunker, coaming 9 1/2" dia x 38" high x 1/2" thick.
 " " " to hold 1 " 9 1/2" x 36 1/2" x 1/2"
 " " " to bridge space, 1 mushroom ventilator 5' dia x 7' high x 1/2" thick.
 " " " " 2 coamings 4' dia x 1/2" thick, 1' 11" high x 1' 10" high, with canvas covers.
 " " " " 9 1/2" dia x 14 1/2" high x 1/2" thick, with wood plug & canvas cover.
 " " " " 6 1/2" x 15" x 1/2"
 x = no closing appliances.

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

On raised quarter deck to after peak 3' dia x 8' high (Gossensack fractured).
 " " " to No.2 double bottom, 1 pipe 8' dia x 10' high, 2 1/2' dia x 17' high (Gossensack fractured).
 " " " " 1 " 2 1/2" x 9 1/2"
 " " " below forecastle erection, 1 pipe 2 1/2" x 7' high, 1 pipe 2 1/2" dia x 7' high to fore peak tank.
 No closing appliances.

Particulars of Gangway Cargo and Coaling Ports:-

none

Particulars of Scuppers and Sanitary Discharge Pipes:-

none

Particulars of Side Scuttles:-

In crew space aft, efficient & fitted with deadlight.
 " bridge space " No deadlight.
 " crew space forward, efficient & fitted with deadlight.

Particulars of Guard Rails:-

On raised quarter deck, bulwarks, steel, 38 1/2" high. Efficient.
 " bridge " wooden bulwarks, 36"
 " foreboard " steel bulwarks, 51"
 " forecastle " guard rails, 2 rows, 36" high (Rails broken)

Particulars of Gangways, Lifelines, etc.:-

A gangway from the bridge to the crew space forward is provided by the top of the cargo hatchway to which there is easy access from the bridge ladder.
 Stanchions are fitted on the starboard side of the hatch but no lifeline is provided.

Particulars of Freeing Arrangements.

	Length of Bulwark	Height of Bulwark	Size of Freeing Ports	Number each side	Area each side	Rule area each side
Raised Quarter Deck After Well	103'0"	38 1/2"	30" x 18"	2	7.5 sq ft	20.6
Forward Well	48'0"	51"	30" x 18"	3	11.25 sq ft	11.3 sq ft
State position of each freeing port ... Raised Quarter Deck 6" } see sketch. "P. and A. position and height above deck edge) After Well: 13" State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such:- shutters on steel runways. Additional area where sheer is less than standard.						

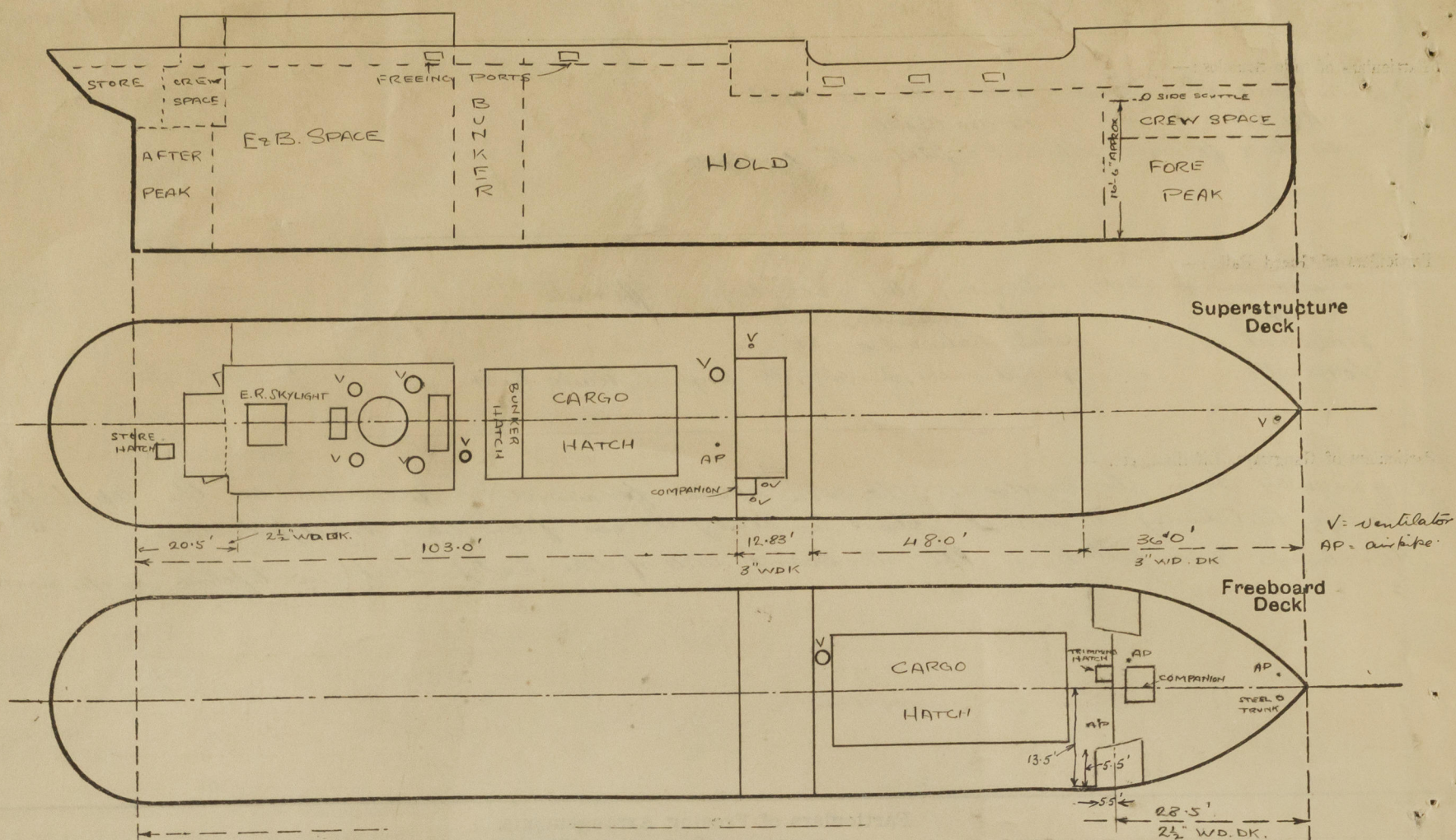
Particulars of Superstructures, Trunks, Casings, Deckhouses.

	Coaming	Plating	Stiffeners	Spacing	End Attachments of Stiffeners	Size of Openings	Height of Sills	Height of Casings
Poop Bulkhead	✓							
Raised Quarter Deck Bulkhead	✓	25"	Diaphragm & brackets					
Bridge, After Bulkhead	✓	25"	15' x 15' H.F.	14'4" H	(vertical) extended top & bottom			
Bridge, Forward Bulkhead	✓	25"	6 1/2' x 3' x 3" R.A.	31"				
Forecastle Bulkhead	✓							
Trunk, Aft	✓							
Trunk, Forward	✓							
Exposed Machinery Casings on Freeboard or Raised Quarter Decks	✓	31"	Plating edges flange 2 1/2"	37"	Bracketed top only	1 @ 22 1/2" x 58"	15 1/2"	7'1"
Exposed Machinery Casings on Superstructure Decks	✓					2 @ 22 1/2" x 59"	18 1/2"	
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	✓	
Bridge, After Bulkhead	See "Companionway"	no openings hinged wood door
Bridge, Forward Bulkhead	✓	no openings
Forecastle Bulkhead	✓	Chen
Exposed Machinery Casings on Freeboard or Raised Quarter Decks	✓	1/2" thick hinged steel doors. securing outside only.
Exposed Machinery Casings on Superstructure Decks	✓	
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	✓	
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 and coaling ports, and any other openings, etc., which would affect the seaworthiness of the ship are to be shewn on the following sketches:—



This survey was carried out afloat & was confined to the details given above.

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

Builder's name and yard number *Culsa S.B. Co. Ltd. Ayr.*

Names of sister ships

Owners *J. Milligan & Co. Ltd.*

Fee £ *6* : *16* : *0*

Received by me



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