

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

Computation of Freeboard for Steamer, Sailing Ship, Tanker
having Loop Bridge & File x B.T. 27/2/39

Port of Survey Newcastle on Tyne

Date of Survey 29 Dec. 1932

Name of Surveyor A. J. Hester

Particulars of Classification + 100 A.1.

Ship's Name	Nationality and Port of Registry	Official Number	Gross Tonnage	Date of Build
<u>S.S. Dulwich</u>	<u>British London</u>	<u>162564</u>	<u>40365</u> <u>4040</u>	<u>1931</u> <u>- 3</u>

Moulded Dimensions: Length 363.83 Breadth 51.75 Depth 27.0

Moulded displacement at moulded draught = 85 per cent. of moulded depth 22.11 = 9578 tons

Coefficient of fineness for use with Tables .446

Depth for Freeboard (D)		Depth correction		Round of Beam correction	
Moulded depth	27.00	(a) Where D is greater than Table depth (D - Table depth) R =		Moulded Breadth (B)	51.75
Stringer plate	.03	(27.03 - 24.26) × 2.799 =	7.45	Standard Round of Beam = $\frac{B \times 12}{50}$	12.42
Sheathing on exposed deck		(b) Where D is less than Table depth (if allowed) (Table depth - D) R =		Ship's Round of Beam	13
T. $\left(\frac{L-S}{L}\right) =$		If restricted by superstructures		Difference	.58
Depth for Freeboard (D) =	24.03			Restricted to	
				Correction = $\frac{\text{Diff}}{4} \times \left(1 - \frac{S_1}{L}\right)$	$\frac{.58}{4} \times \left(1 - \frac{53.88}{51.75}\right) = .07$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed	29.43	29.43	7.6		29.43
" overhang	2.90	1.45			1.45
R.Q.D. enclosed					
" overhang	118.88	118.88	8.0		118.88
Bridge enclosed	44.91	8.92			8.92
" overhang aft	15.0				
" overhang forward	32.45	32.45	7.6		32.45
File enclosed	24.8	4.89			4.89
" overhang	6.72				
Trunk aft					
" forward					
Tonnage opening aft					
" forward					
Total	202.29	196.02			196.02

Standard Height of Superstructure 7.138

" " R.Q.D. -

Deduction for complete superstructure 39.59

Percentage covered $\frac{S}{L} = 55.60\%$

" " $\frac{S_1}{L} = 53.88\%$

" " $\frac{E}{L} = 53.88\%$

Percentage from Table, Line A.
(corrected for absence of forecastle (if required))

Percentage from Table, Line B.
(corrected for absence of forecastle (if required)) 39.88

Interpolation for bridge less than 2L (if required)

Deduction = 39.59 × 39.88 = 15.79

SHEER CORRECTION.

Station	Standard Ordinate	S	Product	Actual Ordinate	Effective Ordinate	S	Product
A.P.	46.38	1	46.38	66	66.00	1	46.38
1/4 L from A.P.	20.64	4	82.56	29.6	29.64	4	82.56
1/2 L	5.10	2	10.20	7.4	7.41	2	10.20
Amidships		4				4	
3/4 L from F.P.	10.20	2	20.40	9.05	9.08	2	18.16
3/4 L	41.28	4	165.12	36.35	36.34	4	145.36
F.P.	92.77	1	92.77	84	84.00	1	84.00
Total			414.43				386.66

Correction = $\frac{\text{Difference between sums of products}}{18} \left(\frac{75-S}{2L} \right) = \frac{414.43 - 386.66}{18} \left(\frac{75-24.8}{2 \times 363.83} \right) = .81$

If limited on account of midship superstructure.

Mean actual sheer aft = Excess

Mean standard sheer aft

Mean actual sheer forward = Deficient

Mean standard sheer forward

Length of enclosed superstructure forward of amidships =

" " aft of " =

Stations	Actual
10.20 3 30.60	9.08 3 27
41.28 3 123.84	36.34 3 109
92.77 1 92.77	84.00 1 84.00
	270

Deduction for Tropical Freeboard.

Addition for Winter and Winter North Atlantic Freeboard.

Ft.

Depth to Freeboard Deck = 27.03

Summer freeboard = 4.79

Moulded draught (d) = 22.24

Deduction for Tropical freeboard and addition for

Winter freeboard = $\frac{d}{4}$ inches = 5.56 = 5.5

Addition for Winter North Atlantic Freeboard (if required) =

Deduction for Fresh Water.

Displacement in salt water at summer load water line

 $\Delta =$

Tons per inch immersion at summer load water line

T =

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

=

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient

	+	-
Depth Correction	7.45	
Deduction for superstructures		15.79
Sheer correction	.81	
Round of Beam correction		.07
Correction for Thickness of Deck amidships		
Other corrections, scantlings, etc.		
	8.56	15.86

Depth Correction

Deduction for superstructures

Sheer correction

Round of Beam correction

Correction for Thickness of Deck amidships

Other corrections, scantlings, etc.

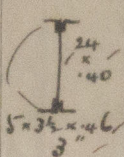
Summer Freeboard = 57.52SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, Wood, Steel, Deck:—

Tropical Fresh Water Line above Centre of Disc	...
Fresh Water Line	"
Tropical Line	"
Winter Line below	"
Winter North Atlantic Line	"

Tropical Fresh Water Freeboard	...
Fresh Water	"
Tropical	"
Winter	"
Winter North Atlantic	"

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PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS												
Description of Hatchway			No 1 for on U. SK.	No 2 on U. SK.	No 3 on Bridge SK.	No 4 & 5 on U. SK.	Cross Battens on Br. SK.	405 on Br. SK.	Battens # on U. SK.	Battens #. Coaming on U. SK. under Br.	Hatches on U. SK. under Br.	Feeder Hatches on U. SK.
Dimensions of Hatchway			24'9" x 25'	25' x 25'	25' x 25'	25' x 25'	4'5" x 16'	12'6" x 8'	5' x 16'	2 @ 5' x 4'	4 @ 2'6" x 2'	8 @ 2'3" x 4'
COAMINGS	{	Height above Deck	44"	44"	31"	44"	31"	31"	9' B.A.	9' B.A.	9' B.A.	30"
		Thickness	44"	44"	44"	44"	44"	44"	9' B.A.	9' B.A.	9' B.A.	40"
		Stiffeners	7' B.A.	7' B.A.	7' B.A.	7' B.A.	9' B.A.	7' B.A.	9' B.A.	9' B.A.	9' B.A.	40"
		Brackets, Stays	3 stays	3	3	3	✓	✓	✓	✓	✓	✓
HATCH BEAMS	{	Number	3	3	3	3						
		Spacing	6'-2"	6'-3"	6'-3"	6'-3"		6'-3"				
		Scantling and Sketch		to No 1	19' x 37' plate 4 L5 5' x 3 1/2' x 4 1/2'	to No 1	✓	8' x 26' plate 4 L5 3' x 3' x 30' 3"	✓	✓	✓	✓
		Bearing Surface	5' x 3 1/2' x 4 1/2' 3"	3	3	3						
FORE AND AFTERS	{	Number										
		Spacing										
		Unsupported Lengths										
		Scantling* and Sketch	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Bearing Surface												
HATCH COVERS	{	Material	W.P.	W.P.	W.P.	W.P.	W.P.	W.P.	W.P.	W.P.	W.P.	W.P.
		Thickness	3"	3"	2 1/2"	3"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"
		How fitted	F & A	F & A	F & A	F & A	F & A	F & A	F & A	F & A	one piece	F & A
		Bearing Surface	3"	3"	3"	3"	3"	3"	3"	3"	3"	2 1/2"
Spacing of Cleats			6' 2 1/2' corners 2 1/2'	6' 2 1/2'	6' 2 1/2'	6' 2 1/2'	6' 2 1/2'	6' 2 1/2'	9' 2 1/2'	6' 2 1/2'		6' 2 1/2'
Number of Tarpaulins			2	2	2	2	2	2	2	2	2	2
<p>*Are wood fore and afters steel shod at all bearing surfaces? <input checked="" type="checkbox"/> Yes</p> <p>Are battens and wedges efficient and in good condition? <input checked="" type="checkbox"/> Yes</p> <p>Are tarpaulins in good condition and in accordance with rule requirements? <input checked="" type="checkbox"/> Yes</p> <p>Are lashings provided in accordance with rule requirements? <input checked="" type="checkbox"/> Yes</p> <p>Hatch to fore Pk. Store on U. SK. 4' x 4' 9' B.A. Coaming Cleats 3 ft. 6" 1 1/2" W.P. Covers F & A. 3" bearing.</p> <p>Single Hatch wood covers in one piece clamped down by toggles</p>												

Particulars of fiddley, funnel and ventilator coamings :—

Stokehold gratings Covered by Strong Steel hinged Covers. ✓ 23 Covers ✓ F & A ✓ 3 bearing ✓
Fidley, Funnel Ventilator Coamings in good Condition. ✓ 2 topmasts ✓
Engine Skylight of Steel Strongly Constructed. ✓
Steel Skylight on Fide to Accn. with wood top. ✓
Steel Skylight to Gallery. Steel Skylight on Poop to Accn. with wood top. ✓

Particulars of Flush Bunker Scuttles:—

none

Particulars of Companionways :—

Companionways:— Steel Houses round masts giving access to Holds.
two 4' x 2' Steel doors in each having 21" Sill & being Capable
of being operated from both Sides. ✓
Steel escape trunk built into poop front, Steel door 5' x 2' having
18" Sill & operable from both Sides. ✓

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

On 4' cle 10" dia to Stove 36 Coaming
4 @ 7" 5 2 @ 9" on 4' cle to Lucc. 36"
2 @ 22" on 4' cle to Hold 30 Coaming
4 @ 7" 9" N.V. to Acc. 12" High
4 @ 22" dia. on mast Houses to Hold 36 Coamings
4 @ 22" " " O. & K. to Hold 10 ft. Coamings, Staged.
On Bridge 2 @ 9" 5 2 @ 12" dia to Stove 30 Coamings
" " 4 @ 24" 5 2 @ 12" " 6 Hold 30 " "

2 @ 22" dia aft on O. & K. to Hold 10 ft Coamings, Staged.
5 @ 8" " on Prop to Acc. 27 Coamings
1 @ 12" " " to Tunnel 30 " "

Vents Constructed in accordance with
the Rules & ^{some} openings closed by wood plugs
or Canvas Covers.

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

3° dia. on F cle tk. to fore peak 12° high
 $3\frac{1}{2}^{\circ}$ dia. on U. tk. to d.b. length 33°
 $2 @ 7^{\circ}$ dia. 24°
 to S. on br. tk. 7 GNV. to board & d.b. $2\frac{1}{2}^{\circ}$ to 7° dia 10° to 21° high
 $2 @ 3^{\circ}$ dia } 4.5° high on U. tk. to d.b.
 $2 @ 4^{\circ}$ -
 $1 @ 3^{\circ}$ -
 On Prof. 5 GNV. 6 dia to Stern & d.b. 10° high
 3° - to f.p. 13° high

Particulars of Gangway Cargo and Coaling Ports:—

None

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Foundation

Particulars of Scuppers and Sanitary Discharge Pipes:—

Sanitary pipes discharge above freeboard deck & are fitted with valves at ship's sides.

Particulars of Side Scuttles:—

Side Scuttles in Poop & side of Substantial Construction fitted with hinged deadlights.

Particulars of Guard Rails:—

On side 3-3 high 3 rods. Stanchions 4-3 apart
On Poop 3-3 " 3 "
Steel Bulwark on Bridge 3-3 high

Particulars of Gangways, Lifelines, etc.:—

Arrangements made as required.

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	87-6"	4-3	1 @ 23-6" x 8" 1 @ 20' x 8"	2	29.1	17.4
Forward Well	76-2" 78-3	4-3	1 @ 19' x 8" 1 @ 23' x 8"	2	28.1	15.23
State position of each freeing port } After Well:— 17-6" & 60 ft. to centre of port from Bridge End. (F. and A. position and height above deck edge) } Forward Well:— 20-6" & 57-4" } side Side House State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such:— open ports. 14" up from SK.						
Additional area where sheer is less than standard.						

Particulars of Superstructures, Trunks, Casings, Deckhouses.

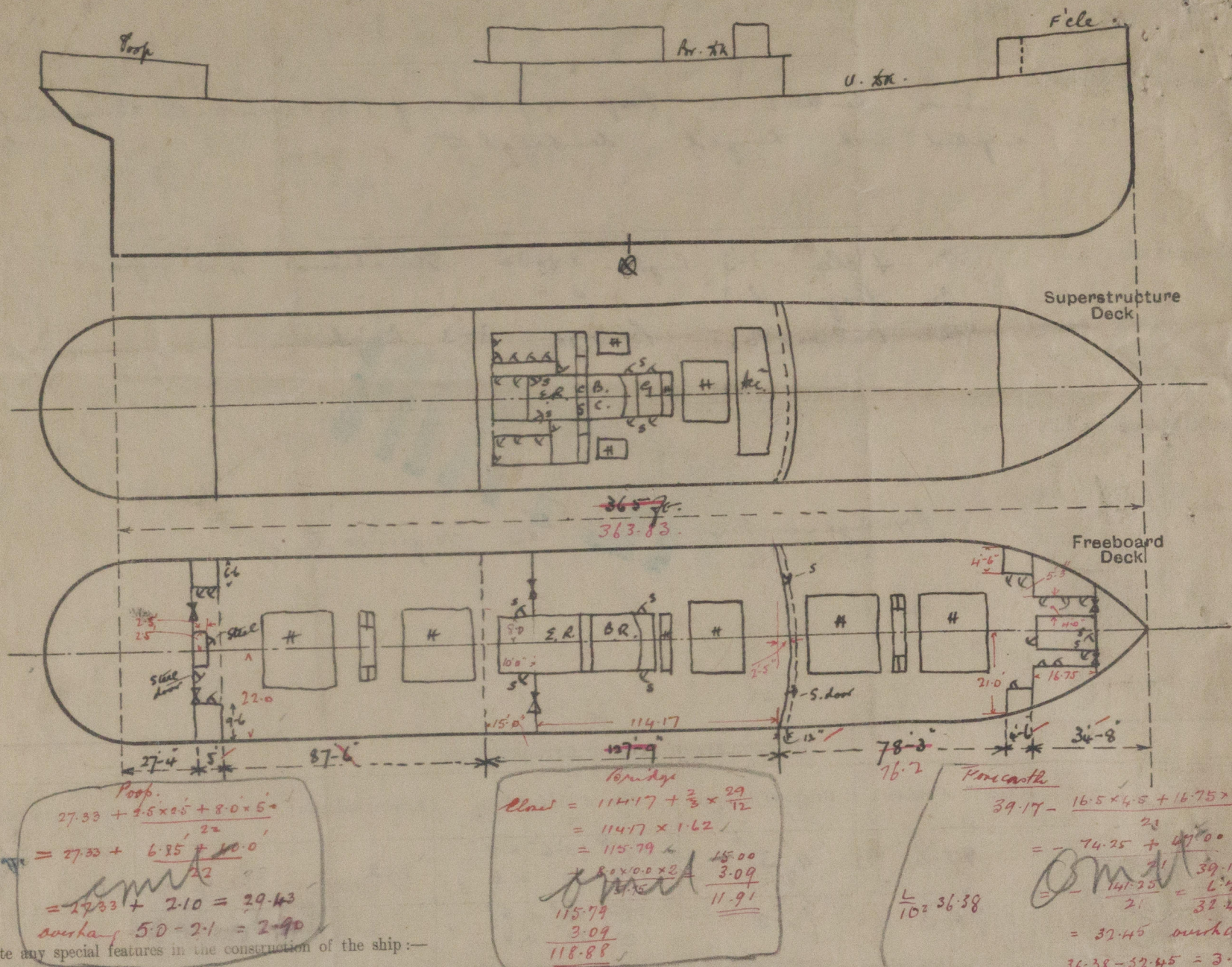
	Coaming	Plating	Stiffeners	Spacing	End Attachments of Stiffeners	Size of Openings	Height of Sills	Height of Casings
Poop Bulkhead	✓	.34	3 x 3 x .30 B.R.D.	27"	✓	3' x 4' 8" x 4' 8" 2 @ 5' x 2' Steel 3 @ 4' 8" x 2' wood	21" 18" 21"	7-6
Raised Quarter Deck Bulkhead ...								
Bridge, After Bulkhead	✓	.34	3" fl. plate	36"	✓	2 @ 4' x 4' 2 @ 4-8 x 2' Steel	21" 24"	8-0
Bridge, Forward Bulkhead40	.34	9 1/2 x 3 1/2 x .50 B.T.	30"	lugs	2 @ 4-9 x 3-2 Steel	21"	8-0
Forecastle Bulkhead	✓	.4	3" fl. plate	2-9"	✓	2 @ 4-3 x 4' wts. 88 x 24"	21" 21"	7-6
Trunk, Aft								
Trunk, Forward								
Exposed Machinery Casings on Freeboard or Raised Quarter Decks ...								
Exposed Machinery Casings on Superstructure Decks	✓	.28	3" fl.	30"	✓	4-8 x 2' 1" as per sketch	18" & 21"	7-0
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	✓	.28	3" fl.	48"	✓	2 @ 5' x 2'	18"	8-0
Deckhouses on Flush Deck Ships ...								

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

Poop Bulkhead	3" boards in riveted channels full height & Steel & wood doors operated both sides.
Raised Quarter Deck Bulkhead ...	
Bridge, After Bulkhead	3" boards in riveted channels full height & 2 Steel doors to SK. operated both sides.
Bridge, Forward Bulkhead	Steel hinged doors secured by hook bolts not passing thro B.R.D. abt 24" apart.
Forecastle Bulkhead	3" boards in riveted channels full height & Steel & wood doors operated both sides.
Exposed Machinery Casings on Freeboard or Raised Quarter Decks ...	
Exposed Machinery Casings on Superstructure Decks	2 to SK. & 2 to B.R. Steel hinged doors, operated both sides.
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	2 Steel hinged doors to fidley operated both sides.
Deckhouses on Flush Deck Ships ...	

Dulwich.

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:—



Timber assignment required.

Substantial Steel Bulwarks in wells having 6" B.A. rail & 6" B.A. supports 6 ft. apart. Connected to deck by single clips double riveted.

No sockets for uprights & no eye plates for lashings tho' bulwark stays have holes in them.

No 2, dry tank, 3 (E.R.) & 4 double bottom tanks have W.T. Centre division.

Secondary Steering by means of tackle & winch.

Vessel measured afloat.

Displ.	at	23'-0"	9596 tons	T.P.I.	37.8
		22'-0"	9117		37.64
		21'-0"	8665		37.4

Builder's name and yard number

Smith's Dock Co. Ltd.

Stockton on Tees.

Names of sister ships

Britann S.S. Co. Ltd.

Similar to S.S. Hartford

Owners

Fee £ 12 : 15 : 0

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