

Lloyd's Register of Shipping.
SURVEYS FOR FREEBOARD.

No. 101375.

18 NOV 1932

Computation of Freeboard for Steamer, <i>Sailing Ship, Tanker</i> having <i>Raised Quarter, Bridge and Forecastle</i> ^{<i>NO</i>}						Port of Survey <i>Birkenhead.</i>
(Type of Superstructures.)						Date of Survey <i>Nov^r. 16th. 1932.</i>
Ship's Name BRIARTHORN.	Nationality and Port of Registry <i>British</i> <i>Liverpool.</i>	Official Number <i>129256.</i>	Gross Tonnage <i>456.</i> <i>459</i>	Date of Build <i>1910.1.</i>	Name of Surveyor <i>T. Richardson.</i>	
Moulded Dimensions: Length <i>154.66</i>		Breadth <i>25.0</i>	Depth <i>12.16</i>	Particulars of Classification <i>✱ 100.A.1.</i>		
Moulded displacement at moulded draught = 85 per cent. of moulded depth			<i>830</i>	<i>55. Lw. No 3. 6.20.</i> <i>5. 5. Lan. No 2. 29.</i>		
Coefficient of fineness for use with Tables <i>.727</i>						

Depth for Freeboard (D)		Depth correction	Round of Beam correction	
Moulded depth	12.16	(a) Where D is greater than Table depth (D - Table depth) R = $(12.20 - 10.31) \times 1.19 = + 1.06$	Moulded Breadth (B)	25.0
Stringer plate	R.Q.D. $\frac{8}{16}$	(b) Where D is less than Table depth (if allowed) (Table depth - D) R = 1.89	Standard Round of Beam = $\frac{B \times 12}{50}$	6.00
Sheathing on exposed deck			Ship's Round of Beam	6"
T $\left(\frac{L-S}{L} \right) =$			Difference	N/L
Depth for Freeboard (D) =	12.20	If restricted by superstructures	Restricted to	
			Correction = $\frac{\text{Diff}}{4} \times \left(1 - \frac{S_1}{L} \right)$	

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	90 ⁺ 00	90.00	3' 10"		90.00
" overhang	8' 7 1/2"				
Bridge enclosed... ..	8' 9"	8' 7 1/2"	8' 8"		8' 7 1/2"
" overhang aft			3" etc.		
" overhang forward	17' 26"				
F'cle enclosed <i>again</i>	15' 11"	17' 26"	6' 3"		17' 26"
" overhang	3' 6"	1' 08"	3" etc.		1' 08"
Trunk aft	2' 16"				
" forward					
Tonnage opening aft					
" " forward					
" Total	118' 17"	117' 09"			117' 09"

STURGES.

Standard Height of Superstructure	6.00
" " R.Q.D.	3.365
Deduction for complete superstructure	21.47
Percentage covered $\frac{S}{L} =$	76.40%
" " $\frac{S_1}{L} =$	75.70%
" " $\frac{E}{L} =$	75.70%
Percentage from Table, Line A.	70.01
(corrected for absence of forecastle (if required))	
Percentage from Table, Line B.	
(corrected for absence of forecastle (if required))	
Interpolation for bridge less than .2L (if required)	
Deduction =	$21.47 \times .7001 = -15.03$

SHEER CORRECTION.

Station [m] [m]	Standard Ordinate	S M	Product	Actual Ordinate	Effective Ordinate	S M	Product
A.P. ...	25.47	1	25.47	50"	15.50 21.12	1	21.12
$\frac{1}{8}$ L from A.P. ...	11.33	4	45.32	21"	7.11 9.40	4	37.60
$\frac{3}{8}$ L " ...	2.80	2	5.60	4 $\frac{1}{2}$ "	1.78 2.32	2	4.60
Amidships ...		4		✓		4	
$\frac{3}{8}$ L from F.P. ...	5.60	2	11.20	$\frac{1}{2}$ "	5.82 5.82	2	11.60
$\frac{1}{8}$ L " ...	22.66	4	90.64	6 $\frac{1}{2}$ "	23.30 23.30	4	93.20
F.P. ...	50.94	1	50.94	19"	56.50 56.50	1	56.50
Total ...			229.17				224.70

SECTION.

Actual Ht of R. O. Lts	=	3.833
Standard	=	3.365
		<u>468</u>
Mean actual shear aft		
Mean standard shear aft	=	$\frac{12}{5.616} = 5.62$

Deficient $> 7\frac{1}{2}\%$

$$\frac{\text{Mean actual sheer forward}}{\text{Mean standard sheer forward}} = \text{Excess}$$

$\frac{\text{Length of enclosed superstructure}}{L}$ forward of amidships = 7.1%

" " aft of " = 1.5

$$\text{Correction} = \frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{8}{21} \right) = \frac{229.17}{224.70} \cdot \frac{4.47}{18} (.75 - .382) = +.09$$

If limited to maximum allowance of $1\frac{1}{2}$ ins. per 100 ft.

<p>Deduction for Tropical Freeboard.</p> <p>Addition for Winter and Winter North Atlantic Freeboard.</p> <p>Depth to Freeboard Deck = <u>20.0</u> Ft. <u>16.03</u></p> <p>Summer freeboard = <u>4.06</u></p> <p>Moulded draught (d) = <u>11.97</u></p> <p>Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = <u>2.99 = 3"</u></p> <p>Addition for Winter North Atlantic Freeboard (if required) = <u>2"</u></p>	<p>Deduction for Fresh Water.</p> <p>Displacement in salt water at summer load water line</p> <p>$\Delta = 979$</p> <p>Tons per inch immersion at summer load water line</p> <p>T = <u>7.5</u></p> <p>Deduction = $\frac{\Delta}{40 T}$ inches = <u>3.26 = 3\frac{1}{4}"</u></p>	<p>TABULAR FREEBOARD corrected for Flush Deck (if required)</p> <p>Correction for coefficient $\frac{727 + 68}{1.36} = \frac{1.407}{1.36}$</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th></th> <th>+</th> <th>-</th> </tr> </thead> <tbody> <tr> <td>Depth Correction</td> <td>1.06</td> <td>-</td> </tr> <tr> <td>Deduction for superstructures</td> <td>-</td> <td>15.03</td> </tr> <tr> <td>Sheer correction</td> <td>.09</td> <td>-</td> </tr> <tr> <td>Round of Beam correction</td> <td>-</td> <td>-</td> </tr> <tr> <td>Correction for Thickness of Deck amidships</td> <td>-</td> <td>-</td> </tr> <tr> <td>Other corrections, scantlings, etc</td> <td>46.00</td> <td>-</td> </tr> <tr> <td></td> <td>47.15</td> <td>15.03</td> </tr> </tbody> </table> <p style="text-align: right;">+ 32.12</p> <p style="text-align: right;">Summer Freeboard = <u>48.83</u></p>		+	-	Depth Correction	1.06	-	Deduction for superstructures	-	15.03	Sheer correction09	-	Round of Beam correction	-	-	Correction for Thickness of Deck amidships	-	-	Other corrections, scantlings, etc	46.00	-		47.15	15.03
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SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, ~~Wood~~, Steel, Deck:— *R.O.D.*

Tropical Fresh Water Line above Centre of Disc	4"
Fresh Water Line	3 1/4"
Tropical Line	3 1/4" LIMITED
Winter Line below	3"
Winter North Atlantic Line	5"

Tropical Line, Wood, Steel, Deck :—		R. Q. D.	4' 0 ³ / ₄ "
Tropical Fresh Water Freeboard	3' - 8 ³ / ₄ "
Fresh Water	"	...	3' - 9 ¹ / ₂ "
Tropical	"	LIMITED	4' 0"
Winter	"	...	4' 3 ³ / ₄ "
Winter North Atlantic	"	...	4' 5 ³ / ₄ "

PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS										
Description of Hatchway			No 1. IN FORE WELL.		No 2. ON R. Q. DK		BUNKER HATCH ON CASING TOP.			
Dimensions of Hatchway			24'5" x 14'0".		24'5" x 14'0".		4'6" x 10'1 1/2"			
COAMINGS	{	Height above Deck	3'0" /		as No. 1. /	11" /	12" Cleats 19" apart /	6" /	12" Cleats 13" + 21" apart /	
		Thickness	{ Sides Ends							as No. 1. /
		Stiffeners	3/8" /							
		Brackets, Stays	2 @ 6" x 1/2" B. Plats. /							
HATCH BEAMS	{	Number	2. /		as No. 1. /	✓	18" high x 7 1/2" /	12" high x 7 1/2" /	12" high x 7 1/2" /	
		Spacing	see sketch /							
		Scantling and Sketch	7 1/2" Plats 47" x 38" x 5/16" /							
		Bearing Surface	Angles 2 1/2" x 2 1/2" x 5/16" /							
FORE AND AFTERS	{	Number	3. /		as No. 1. /	✓	18" high x 7 1/2" /	12" high x 7 1/2" /	12" high x 7 1/2" /	
		Spacing	3'6" /							
		Unsupported Lengths	as per Web spacing /							
		Scantling* and Sketch	Centre 8" x 6 1/2" /							
HATCH COVERS	{	Material	W.W. /		W.W. /	2 1/2" /	3" x 2" /	2 1/2" /	2 1/2" /	
		Thickness	2 1/2" /							
		How fitted	Thwartships /							
		Bearing Surface	3" /							
Spacing of Cleats			24" /		26" /		24" + 20" /			
Number of Tarpaulins			2. /		2. /		one /			
							A.		B.	
									C.	

Particulars of Scuppers and Sanitary Discharge Pipes:—

Scuppers from Freeboard D^m. in Well 1½" x 2½" thro Gunwale Bar. also from Quarter D^m. 5" x 3½".
W.C. Forward 4" diam. Discharge 12" above Deck. non return Valve not fitted.
W.C. in Casings aft 4" diam. Discharge, out 3:0 below R.Q.D^m. Non return Valve fitted.

Particulars of Side Scuttles:—

9" Diam. Side Scuttles to Crew Space in Forecastle. No Deadlights fitted
all Scuttles of substantial construction.

Particulars of Guard Rails:—

Guard rails on Forecastle 3:5 high, with 2 rods and stanchions spaced 3:3 apart.
Steel bulwark on Freeboard D^m. in Well 3:4½ high efficiently constructed and supported
" " " Quarter " 3:0 " " " " " 7" x 3" Teak rail on top
" " " Bridge " 3:6 " " " " " " "

Particulars of Gangways, Lifelines, etc.:—

Hatch Top in forward Well forms Gangway, with wire stretched from Bridge front to Forecastle Bulkhead, bowed down in way of Hatch

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	90:0 /	3:0	19" x 15" 44" x 18"	3 1/3	5.925 18	18.00
Forward Well	36:6 /	3:4½	28" x 18"	3	10.48	10.15

State position of each freeing port } After Well:— from Bridge end 7:2, 45:0, 71:6, 4" above Deck edge.
(F. and A. position and height above deck edge) } Forward Well:— " front 1:8, 12:0, 27:6
State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such:— Hinged plate shutters

Additional area where sheer is less than standard.

Particulars of Superstructures, Trunks, Casings, Deckhouses.

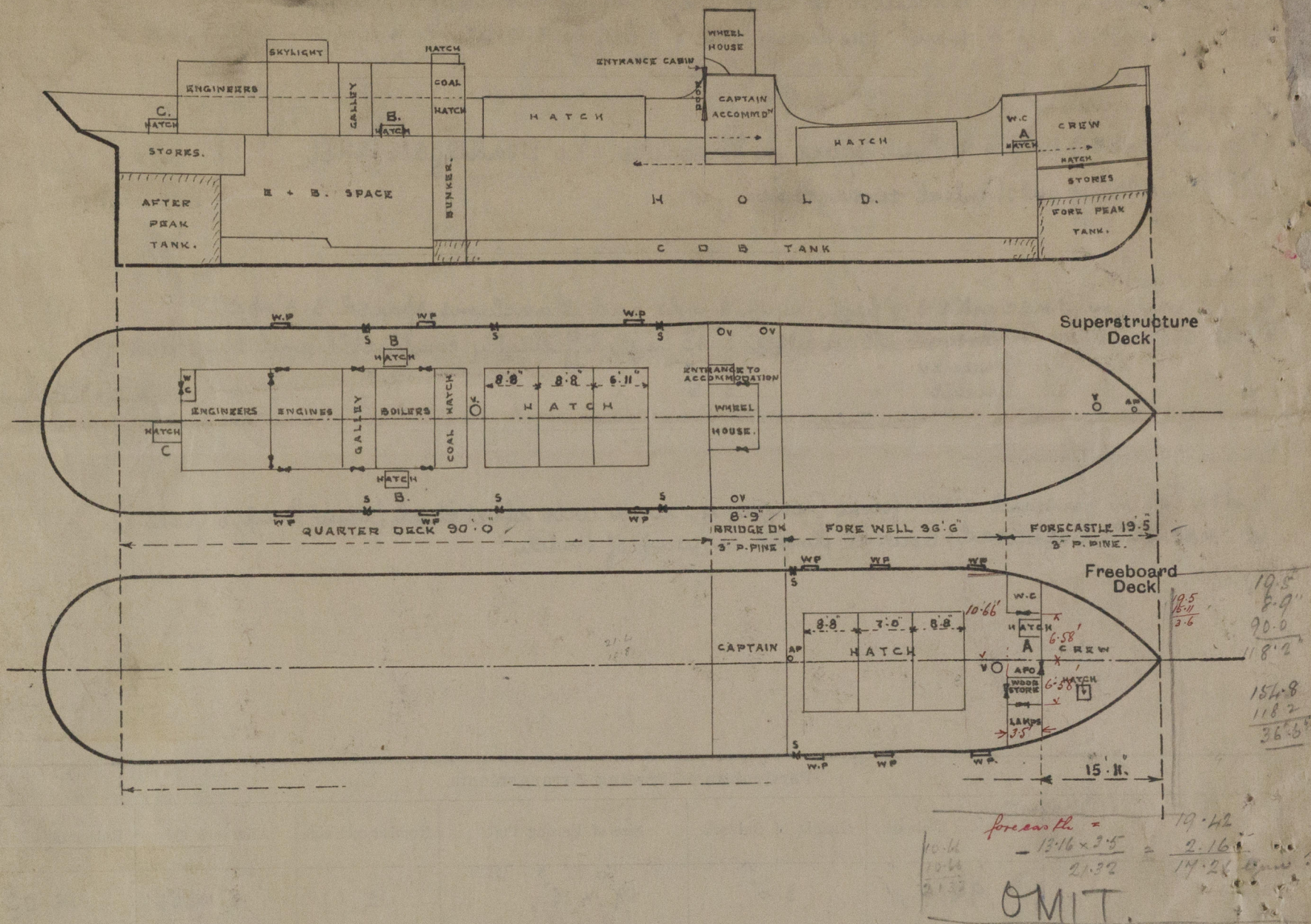
	Coaming	Plating	Stiffeners	Spacing	End Attachments of Stiffeners	Size of Openings	Height of Sills	Height of Casings
Poop Bulkhead								
Raised Quarter Deck Bulkhead								
Bridge, After Bulkhead	not available		Diaphragms			Two 10" Lights		8:8
Bridge, Forward Bulkhead	3/8	1/4	6 x 3 x 7/16 B.A.	30	Brackets top & bottom	10" Lights		8:8
Forecastle Bulkhead	1/4	1/4	3 x 2 1/2 x 5/16	33		one S. Door 3:8 x 1:10	20	6:3
Trunk, Aft								
Trunk, Forward								
Exposed Machinery Casings on Freeboard on Raised Quarter Decks	6/20	5/20	3 1/2 x 3 x 1/10	30	Brackets to Casings top	four S. Doors 3:10 x 1:9 1/2	23	6:6
Exposed Machinery Casings on Superstructure Decks								
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	Side lights 10" diam. opened from inside
Bridge, After Bulkhead	
Bridge, Forward Bulkhead	
Forecastle Bulkhead	- do -
Exposed Machinery Casings on Freeboard on Raised Quarter Decks	Steel Door in vertical halves, manipulated both sides. Padlock outside.
Exposed Machinery Casings on Superstructure Decks	
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	
Deckhouses on Flush Deck Ships	

BRIARTHORN

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:—

Survey of Vessel in Dry Dock for Freeboard Assignment and part S.B. 2nd No. 3. which is to be completed within the year of grace, that is June 1933.

Timber Freeboard not required.

omit.

Builder's name and yard number A. Hall & Co. Ltd. Aberdeen.

Names of sister ships

Owners W. J. Ireland.

Fee £ 5 : 2 : 0.

Received by me



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