

# Lloyd's Register of Shipping.

## SURVEYS FOR FREEBOARD.

Computation of Freeboard for Steamer, ~~Sailing Ship~~ Tanker  
having *complete superstructure having one tonnage opening aft*  
*Forecastle on C.S.S. Deck*

(Type of Superstructures.) *see M of T 21/2/48*

Ship's Name <b>"BOLTONHALL"</b>	Nationality and Port of Registry <i>British</i> <i>West Hartlepool</i>	Official Number <i>160775</i>	Gross Tonnage <i>4788</i> <i>4824.50</i>	Date of Build <i>1935-12mo.</i>
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Moulded Dimensions: Length *408.00* Breadth *54.54* Depth *27.58*  
Moulded displacement at moulded draught = 85 per cent. of moulded depth *11190.* tons  
Coefficient of fineness for use with Tables  $\frac{408 \times 54.54 \times 27.58 \times 85}{11190 \times 35} = .751$

Port of Survey *West Hartlepool*  
Date of Survey *whilst building*  
Name of Surveyor *C.A. Millar*  
Particulars of Classification ☒ 100A1  
*with freeboard*  
*(contemplated)*

Depth for Freeboard (D)	Depth correction	Round of Beam correction
Moulded depth ... .. <i>27.58</i>	(a) Where D is greater than Table depth (D - Table depth) R = $(27.62 - 27.20) \times 3 = +1.26$ ✓	Moulded Breadth (B) <i>54.54</i>
Stringer plate ... .. <i>.04</i>	(b) Where D is less than Table depth (if allowed) (Table depth - D) R =	Standard Round of Beam = $\frac{B \times 12}{50} =$ <i>13.89</i>
Sheathing on exposed deck $T \left( \frac{L-S}{L} \right) =$ ✓	If restricted by superstructures ✓	Ship's Round of Beam = <i>13.50</i>
Depth for Freeboard (D) = <i>27.62</i>		Difference <i>.41</i>
		Restricted to
		Correction = $\frac{\text{Diff}^{\circ}}{4} \times \left( 1 - \frac{S_1}{L} \right) =$ $\frac{.41}{4} \times .0064 = 0$

## DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S <sub>1</sub> )	Height	Height Correction	Effective Length (E)
Poop enclosed ... ..	35.08	35.08	8.5	✓	35.08
„ overhang ... ..					
R.Q.D. enclosed ... ..					
„ overhang ... ..					
Bridge enclosed ... ..					
„ overhang aft ... ..					
„ overhang forward ... ..	367.75	367.75	8.5		367.75
Fore enclosed ... ..					
„ overhang ... ..					
Trunk aft ... ..					
„ forward ... ..					
Tonnage opening aft ... ..	5.17	2.58			2.58
„ „ forward ... ..					
Total ... ..	408.00	405.41			405.41

Standard Height of Superstructure	7.5
„ „ R.Q.D.	✓
Deduction for complete superstructure	4.2
Percentage covered $\frac{S}{L} =$	100%
„ „ $\frac{S_1}{L} =$	99.36
„ „ $\frac{E}{L} =$	99.36
Percentage from Table, Line A.	99.21
(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 = $4.2 \times .9921 =$	4.167 ✓

## SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ... ..	50.80	1		50.80	52.50	64.5	1		64.5
$\frac{1}{2}$ L from A.P. ... ..	22.61	4		90.44	22.50	28.7	4		114.8
$\frac{2}{2}$ L „ ... ..	5.59	2		11.18	5.80	7.1	2		14.2
Amidships ... ..	-	4		-	-	-	4		-
$\frac{2}{2}$ L from F.P. ... ..	11.17	2		22.34	11.30	12.3	2		24.6
$\frac{1}{2}$ L „ ... ..	45.21	4		180.84	43.50	49.9	4		199.6
F.P. ... ..	101.60	1		101.60	99.70	111.7	1		111.7
Total ... ..				457.20					529.4

Mean actual sheer aft = *Excess*  
Mean standard sheer aft = *Diff*

Mean actual sheer forward = *do*  
Mean standard sheer forward = *do*

Length of enclosed superstructure forward of amidships =  
L  
„ „ aft of „ = *C.S.S.*

Correction =  $\frac{\text{Difference between sums of products}}{18} \left( .75 - \frac{S}{2L} \right) = 4.01 \left( .75 - .50 \right) = 1.00$

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.	Deduction for Fresh Water.	TABULAR FREEBOARD corrected for Flush Deck (if required)	73.98
Addition for Winter and Winter North Atlantic Freeboard.	Displacement in salt water at summer load water line	Correction for coefficient $\frac{.751 + .680}{1.36} = \frac{1.431}{1.36}$	77.84
Depth to Freeboard Deck = <i>27.62</i>	$\Delta = 11890$	Depth Correction ... ..	1.26
Summer freeboard = <i>3.04</i>	Tons per inch immersion at summer load water line	Deduction for superstructures ... ..	4.167
Moulded draught (d) = <i>24.58</i>	T = <i>43.5</i>	Sheer correction ... ..	1.00
Deduction for Tropical freeboard and addition for	Deduction = $\frac{\Delta}{40T}$ inches	Round of Beam correction ... ..	-
Winter freeboard = $\frac{d}{4}$ inches = <i>6.14 = 6\frac{1}{4}</i>	= <i>11890</i>	Correction for Thickness of Deck amidships ... ..	-
Addition for Winter North Atlantic Freeboard (if required) =	<i>40 + 43.5</i>	Other corrections, scantlings, etc. ... ..	-
	<i>6.83 = 6\frac{3}{4}</i>		
		Summer Freeboard = <i>36.43</i>	

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

Tropical Fresh Water Line above Centre of Disc ... ..	13	Tropical Fresh Water Freeboard ... ..	1 - $11\frac{1}{2}$
Fresh Water Line „ „ ... ..	<i>6\frac{3}{4}</i>	Fresh Water „ „ ... ..	2 - $5\frac{3}{4}$
Tropical Line „ „ ... ..	<i>6\frac{1}{4}</i>	Tropical „ „ ... ..	2 - $6\frac{1}{4}$
Winter Line below „ „ ... ..	<i>6\frac{1}{4}</i>	Winter „ „ ... ..	3 - $6\frac{3}{4}$
Winter North Atlantic Line „ „ ... ..	-	Winter North Atlantic „ „ ... ..	-

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## PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS											
SUPERSTRUCTURES.											
Description of Hatchway	No. 1.	No. 2	No. 3.	No. 4	No. 5	No. 1.	No. 2	No. 3+4.	No. 5	BUNKER HATCH	
Dimensions of Hatchway	29-3 x 20	33-7 x 20	18-1 x 20	36-2 x 20	31 x 20	29-3 x 20	33-7-20	18-1 x 20	31-0 x 20	9-4 x 20	
COAMINGS	Height above Deck	31"	31"	31"	31"	31"	9" BA	9" BA	9" BA	9" BA	
	Thickness	.44	.60	.44	.65	.44	.68	.68	.68	.68	
	Stiffeners	8 x 3 x 40	8 x 3 x 40	8 x 3 x 44	8 x 3 x 44	8 x 3 x 40	-	-	-	8 x 3 x 40	
	Brackets, Stays	2	3.	1	3	2	-	-	-	1	
HATCH BEAMS	Number	5	5	2	5	5	5	2.	5	1	
	Spacing	4-10 1/2	5-7	6-0	6-0	5-2	4-10 1/2	5-7	6-0	4-8	
	Scantling and Sketch	18 x 35	15 x 34	16 x 34	16 x 34	13 1/2 x 34	18 x 35	19 1/2 x 37	20 x 38	18 1/2 x 36	
	Bearing Surface	3 1/2"	3 1/2"	3 1/2"	3 1/2"	3 1/2"	3 1/2"	3 1/2"	3 1/2"	3 1/2"	
FORE AND AFTERS	Number	1 Bunker P + S.					Running Hatches			one bunker hatch	
	Spacing	17-2' x 4' x 31" high					on fore deck 2' x 2' x 9"			each side on fore	
	Unsupported Lengths	with 2 1/2" covers, cleats					coamings with 2 1/2"			deck with 9" BA	
	Scantling* and Sketch	spaced 24" + 2 tarpaulins					hinged wood covers			coamings 2 1/2"	
HATCH COVERS	Material	WP.	WP.	WP.	WP.	WP.	WP.	WP.	WP.	WP.	
	Thickness	3"	3"	3"	3"	3"	3"	3"	3"	3"	
	How fitted	F + A.	F + A.	F + A.	F + A.	F + A.	F + A.	F + A.	F + A.	F + A.	
	Bearing Surface	3"	3"	3"	3"	3"	3"	3"	3"	3"	
Spacing of Cleats	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	
Number of Tarpaulins	2.	2	2	2	2.	2	2.	2.	2	2	
*Are wood fore and afters steel shod at all bearing surfaces?											
Are battens and wedges efficient and in good condition?											
Are tarpaulins in good condition and in accordance with rule requirements?											
Are lashings provided in accordance with rule requirements?											

Particulars of fiddley, funnel and ventilator coamings:—

The Tiddle openings are closed with hinged steel covers.  
The Engine room skylight is of steel with hinged flaps & glass bulls eyes.  
The funnel & ventilators are of strong construction.

Particulars of Flush Bunker Scuttles:—

NONE

Particulars of Companionways :—

Two Mast Houses of efficient construction, with hinged steel doors operated from both sides. Height of sills 19".

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

1-12" Ventilator 3' high x 34" thick on Telle. D<sup>K</sup> to Fore Peak.

2-18" " 3' " x 40 " " " " " hold

8-18" " 3' " 40 " " C.S.S. " " "

1-18 " Derrick host " " " " " " stayed

[illegible]

2 Vents. 4' diam.  $\times$  .30  $\times$  3' high on C.S.S. to Boiler R. Lining  
2 " 5" "  $\times$  .30  $\times$  3' " " " " store  
2 " 9" "  $\times$  .32  $\times$  3' " " " " crew's space.

{ 2 " 5" " x.30 x 3' " " " " store

{2 - 9' " x 32 x 3' " " " " crew's space.

18

11. 11. 18

Wood plugs & canvas covers to all ventilators

18

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

4 Air pipes on Upper Deck (C.S.S.) 4 1/2 diam. C.I. 18" to mouth

2 " " " " " 3 1/2 " C.I. 18" "

4 " " " " " " 3 " C.I 18" " "

2      3      4      5      6      7      8      9      10      11      12      13      14      15      16      17      18      19      20      21      22      23      24      25      26      27      28      29      30      31      32      33      34      35      36      37      38      39      40      41      42      43      44      45      46      47      48      49      50      51      52      53      54      55      56      57      58      59      60      61      62      63      64      65      66      67      68      69      70      71      72      73      74      75      76      77      78      79      80      81      82      83      84      85      86      87      88      89      90      91      92      93      94      95      96      97      98      99      100

fitted with wood plugs

24 25 26 27

11

500 500 500 500

Particulars of Gangway Cargo and Coaling Ports:—

NONE.

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Lloyd's Register  
Foundation



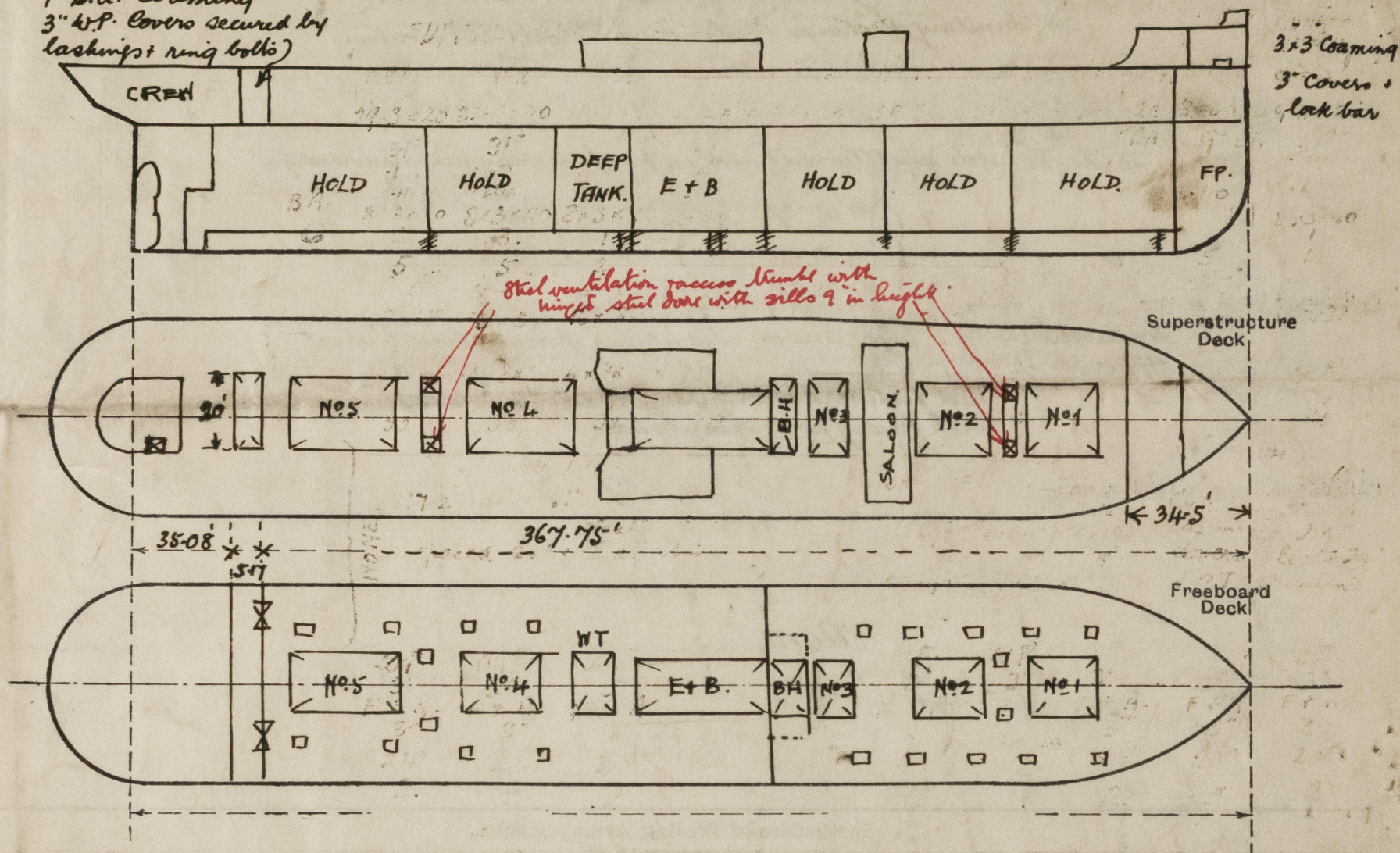
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Superstructure bulkheads, trunks, deckhouses, casings, cargo and coaling hatchways, extent and thickness of sheathing on the freeboard deck, gangway, cargo and coaling ports, and any other openings, etc., which would affect the seaworthiness of the ship are to be shewn on the following sketches:—

**Tonnage Opening**

9" B.A. Coaming  
3" W.P. Covers secured by  
lashings + ring bolts



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

*There are no special features.*

*This vessel is expected to be completed on the 12<sup>th</sup> December, 1935*

*A request form for freeboard assignment is enclosed herewith*

Builder's name and yard number *Wm. Gray & Co. Ltd* *Nº 1056*

Names of sister ships *S.S. "Boltonhall" S.S. "Kerwickhall" West Hartlepool Rpt. Nos. 17184 & 17166*  
*respectively.*

Owners *The West Hartlepool Steam Navigation Co. Ltd*

Fee £ *15* : *0* : *0*

Received by me