

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

Index. No. 33220
(For London Office only.)

15 SEP 1932

No 12773.

Computation of Freeboard for Steamer, Sailing Ship, Tanker
having Raised Quarter Deck and Forecastle.

(Type of Superstructures.)

Port of Survey Bristol

Date of Survey 13th Sept. 1932

Name of Surveyor J. Anderson

Particulars of Classification +100 A.1.

Ship's Name "DRUID STOKE" Nationality and Port of Registry BRITISH BRISTOL Official Number 149994 Gross Tonnage 486 Date of Build 1929-8

Moulded Dimensions: Length 145.00 × Breadth 26.70 Depth 12.6

Moulded displacement at moulded draught = 85 per cent. of moulded depth 876 tons

Coefficient of fineness for use with Tables .751

Depth for Freeboard (D)	Depth correction	Round of Beam correction
Moulded depth <u>12.50</u>	(a) Where D is greater than Table depth (D - Table depth) R = <u>(12.53 - 9.67) × 1.115 = + 3.19</u>	Moulded Breadth (B) <u>26.5</u>
Stringer plate <u>.30</u> <u>.03</u>	(b) Where D is less than Table depth (if allowed) (Table depth - D) R = <u>2.86</u>	Standard Round of Beam = $\frac{B \times 12}{50} = \frac{26.5 \times 12}{50} = 6.36$
Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$ <u>✓</u>	If restricted by superstructures	Ship's Round of Beam = <u>6.45</u> <u>7"</u>
Depth for Freeboard (D) = <u>12.53</u>		Difference <u>excess .64</u>
		Restricted to
		Correction = $\frac{\text{Diff}^*}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{.64}{4} \left(1 - \frac{.5649}{14.351} \right) = .09$

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>45.25</u>	<u>45.25</u>	<u>45.25</u>	<u>3.50</u>		<u>45.25</u>
" overhang					
Bridge enclosed ✓					
" overhang aft					
" overhang forward					
F'cle enclosed <u>17.84</u> <u>16.12</u> <u>3.58</u>	<u>17.84</u>	<u>17.84</u>	<u>7.00</u>		<u>17.84</u>
" overhang <u>AT SIDES</u>					
Trunk aft ✓					
" forward ✓					
Tonnage opening aft ✓					
" " forward					
Total	<u>63.09</u>	<u>63.09</u>			<u>63.09</u>

Standard Height of Superstructure <u>6.00</u>	
" " R.Q.D. <u>3.300</u>	
Deduction for complete superstructure <u>20.5</u>	
Percentage covered $\frac{S}{L} = \frac{45.25}{14.351} = 43.51$	
" " $\frac{S_1}{L} = \frac{45.25}{14.351} = 43.51$	
" " $\frac{E}{L} = \frac{45.25}{14.351} = 43.51$	
Percentage from Table, Line A. <u>26.48</u>	
(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 = <u>20.5 × .2648 = -5.43</u>	

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P.	<u>24.50</u>	1		<u>24.50</u>	<u>14.00</u>	<u>14.00</u>	1		<u>14.00</u>
$\frac{1}{4}$ L from A.P.	<u>10.90</u>	4		<u>43.60</u>	<u>4.74</u>	<u>4.74</u>	4		<u>18.96</u>
$\frac{3}{8}$ L " "	<u>2.69</u>	2		<u>5.38</u>	<u>1.18</u>	<u>1.18</u>	2		<u>2.36</u>
Amidships ✓		4		<u>.00</u>			4		<u>✓</u>
$\frac{3}{8}$ L from F.P.	<u>5.39</u>	2		<u>10.78</u>	<u>3.35</u>	<u>3.36</u>	2		<u>6.72</u>
$\frac{1}{4}$ L " "	<u>21.80</u>	4		<u>87.20</u>	<u>13.43</u>	<u>13.43</u>	4		<u>53.72</u>
F.P.	<u>49.00</u>	1		<u>49.00</u>	<u>36.00</u>	<u>36.00</u>	1		<u>36.00</u>
Total				<u>220.46</u>					<u>131.76</u>

Mean actual sheer aft = Deficient
Mean standard sheer aft =Mean actual sheer forward = Deficient
Mean standard sheer forward =Length of enclosed superstructure forward of amidships = ✓
" " aft of " = Does not apply.Correction = Difference between sums of products $\left(\frac{75-S}{2L} \right) = \frac{88.70}{18} \left(\frac{75-21.75}{2 \times 14.351} \right) = +2.62$

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.

Addition for Winter and Winter North Atlantic Freeboard.

Depth to Freeboard Deck = 12.53 Ft.Summer freeboard = 1.33Moulded draught (d) = 11.20

Deduction for Tropical freeboard and addition for

Winter freeboard = $\frac{d}{4}$ inches = 2.55 = 2 $\frac{1}{2}$ "

Addition for Winter North Atlantic Freeboard (if required) =

Deduction for Fresh Water.

Displacement in salt water at summer load water line

 $\Delta = 930$

Tons per inch immersion at summer load water line

T = 7.85Deduction = $\frac{\Delta}{40T}$ inches =

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient

 $\frac{.751 + .68}{1.36} = \frac{1.431}{1.36}$ 14.8515.63Depth Correction 3.19Deduction for superstructures -5.43Sheer correction 2.62Round of Beam correction09

Correction for Thickness of Deck amidships

Other corrections, scantlings, etc.

5.81 5.52 + .29Summer Freeboard = 15.92

SUMMER 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 " " <u>2$\frac{1}{2}$"</u>	
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	...	...	N ^o 1	N ^o 2	COAL HATCH ON TOP OF FIDLEY.	2 COAL HATCHES ON R.Q. DECK			
Dimensions of Hatchway	...	...	30'-5 1/2" x 18'-6"	30'-5 1/2" x 18'-6"	4'-0" x 8'-0"	4'-8" x 1'-7"			
COAMINGS	Height above Deck	...	4'-8"	4'-8"		24"			
	Thickness { Sides	...	4'-0"	4'-0"	6" x 3"	32"			
	Thickness { Ends	...	4'-0"	4'-0"	4'-0" S.A.	32"			
	Stiffeners	...	7' x 3' x 40' L	7' x 3' x 40' L		NONE			
	Brackets, Stays	...	3	3		NONE			
HATCH BEAMS	Number	...	5	5					
	Spacing	...	5'-1"	5'-1"					
	Scantling and Sketch	...	PLATE 17'-9 1/2" x 36"	SAME AS N ^o 1.	NONE	NONE			
	Bearing Surface	...	3"	3"					
FORE AND AFTERS	Number	...							
	Spacing	...							
	Unsupported Lengths	...							
	Scantling* and Sketch	...	NONE.	NONE.	NONE	NONE			
	Bearing Surface	...							
HATCH COVERS	Material	...	W.P.	W.P.	W.P.	W.P.			
	Thickness	...	2 1/2"	2 1/2"	2 1/2"	2 1/2"			
	How fitted	...	F. & A.	F. & A.	F. & A.	F. & A.			
	Bearing Surface	...	4"	4"	2 1/2"	2 1/2"			
Spacing of Cleats	...	...	24"	24"	24"	NONE 24"			
Number of Tarpaulins	...	...	2	2	2	+ 2			
<p>*Are wood fore and afters steel shod at all bearing surfaces? <i>NONE.</i></p> <p>Are battens and wedges efficient and in good condition? <i>YES.</i></p> <p>Are tarpaulins in good condition and in accordance with rule requirements? <i>YES.</i></p> <p>Are lashings provided in accordance with rule requirements? <i>YES.</i></p>									

Particulars of fiddle, funnel and ventilator coamings:—

Stokehold gratings covered by strong steel hinged covers.
Fidley and funnel ventilators in efficient condition.
Engine skylight of steel, strongly constructed.

Particulars of Flush Bunker Scuttles:—

NONE.

Particulars of Companionways:—

NONE.

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

2 ventilators on freeboard deck in forward well 12" dia., boaming 36" x 30" led to hold.

Both ventilators constructed in accordance with the rules & coamings closed with wood plugs and canvas covers.

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

One C.I. air pipe on fore-castle deck 18" high x 4" dia. from fore peak.
" " " " R. Q. " 10" " x 4" " " aft "

Air pipes closed with canvas covers.

Particulars of Gangway Cargo and Coaling Ports:—

NONE.



Particulars of Scuppers and Sanitary Discharge Pipes:—

One sanitary discharge below freeboard deck fitted with non return valve on ship's side.

Particulars of Side Scuttles:—

No side scuttles below freeboard deck.

Side scuttles to crew spaces in forecastle fitted with hinged deadlights.

Particulars of Guard Rails:—

Guard rails on forecastle deck 3'0" high with 2 rods and stanchions spaced 4'3" apart. Steel bulwarks on freeboard deck in forward well 3'6" high and on Raised Quarter deck 2'6" high, both efficiently constructed and supported.

Particulars of Gangways, Lifelines, etc.:—

Suitable provisions are made for rigging lifelines which will be available for use in any part of the ship which may be used by the crew in the regular working of the ship.

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 ...	45'3"	2'6"	2'0" x 1'3"	3	7½ sq. ft.	11.02
Forward Well ...	80'05" 84'2"	3'6"	3'0" x 1'6"	4	18 sq. ft.	16

State position of each freeing port ... After Well:— FROM R.Q. DECK BULKHEAD TO FORE END OF F.P. 9'0", 25'0", 38'6" ABOVE D.E. 4"
(F. and A. position and height above deck edge) Forward Well:— " " " " " AFT " " " 5'2", 22'6", 40'6", 58'6" " " " 8"

State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such:—

Additional area where sheer is less than standard.

BALANCED PLATE SHUTTERS. See C11 and 15

Particulars of Superstructures, Trunks, Casings, Deckhouses.

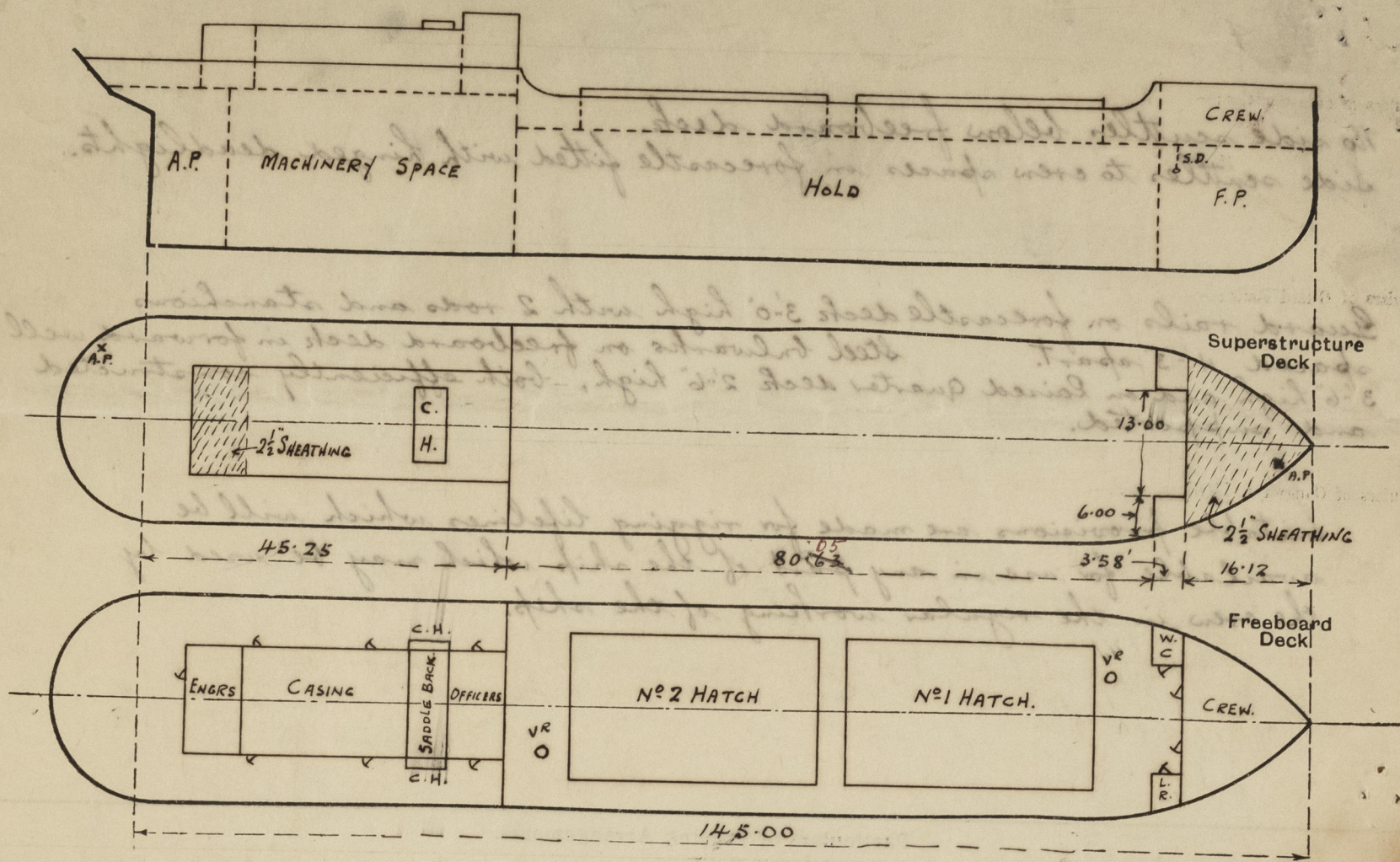
	Coaming	Plating	Stiffeners	Spacing	End Attachments of Stiffeners	Size of Openings	Height of Sills	Height of Casings
Poop Bulkhead ...	✓							
Raised Quarter Deck Bulkhead ...		.28"	6" x 3" x 44" B.A.	33"	brkt	NONE	✓	3'6"
Bridge, After Bulkhead ...	✓							
Bridge, Forward Bulkhead ...	✓							
Forecastle Bulkhead ...		.26"	3" x 2½" x 26"	30"	NONE	4'10" x 1'10"	15"	7'0"
Trunk, Aft ...	✓							
Trunk, Forward ...	✓							
Exposed Machinery Casings on Free board or Raised Quarter Decks ...	.32"	.28"	3½" x 2½" x 28"	28"	brkt top	5'0" x 2'0"	15"	7'0"
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 ...	No openings.
Bridge, After Bulkhead ...	✓
Bridge, Forward Bulkhead ...	✓
Forecastle Bulkhead ...	✓
Exposed Machinery Casings on Free board or Raised Quarter Decks ...	Hinged wood doors operated from both sides.
Exposed Machinery Casings on Superstructure Decks ...	Hinged steel doors operated from both sides.
Machinery Casings within Superstructures not fitted with Class I Closing Appliances ...	✓
Deckhouses on Flush Deck Ships ...	✓

David Stone

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:—



Eqn's Rh. = 16.12
 $\frac{6 \times 9.58}{12.5} = 1.72$
 17.84

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

This survey has been held in drydock but is confined to an examination of the means for closing the openings in the deck and sides of the vessel.

Builder's name and yard number C. Hill & Sons, Ltd. Bristol.

Yard No. 174

Names of sister ships

Owners Osborn and Wallis, Ltd.

Fee £ 5 : 2 : 0

Received by me



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