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WRECK HAY

No. 176-2

Index No.

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Shd 163.

31029

-3 NOV 1932

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

pt. C.11.

Computation of Freeboard for Steamer, ~~Sailing Ship, Tanker~~
having Raised Quarter Deck, Bridge (on R.Q.D.) + Forecastle

Port of Survey Goole

Date of Survey 1st November 1932

Name of Surveyor G. Knoffart

Particulars of Classification #100 A1
Large battens not fitted.
S.S. 500. No 7-29

new named

Ship's Name Exhatsford
Exhatsford
Nationality and Port of Registry Br. Goole
Grangemouth
Official Number 146344
Gross Tonnage 1585
Date of Build 1924
10mo
Moulded Dimensions: Length 250' Breadth 37.82' Depth 16'9"
Moulded displacement at moulded draught = 85 per cent. of moulded depth 2830 tons
Coefficient of fineness for use with Tables .736

Depth for Freeboard (D)	Depth correction	Round of Beam correction
Moulded depth ... <u>16'9"</u>	(a) Where D is greater than Table depth (D-Table depth) R = <u>(16.78-16.67) x 1.923 = + .21</u>	Moulded Breadth (B) <u>37.82</u>
Stringer plate <u>(R.Q.D. @ 5)</u>	(b) Where D is less than Table depth (if allowed) (Table depth-D) R =	Standard Round of Beam = $\frac{B \times 12}{50} =$ <u>9.08</u>
Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$	If restricted by superstructures	Ship's Round of Beam = <u>9.2</u>
Depth for Freeboard (D) = <u>16.78</u>		Difference <u>.42</u>
		Restricted to <u>.304</u>
		Correction = $\frac{\text{Diff}}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{.42}{4} (1 - .696) = -.03$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Pop enclosed ...					
" overhang ...					
R.Q.D. enclosed ...	<u>94.5'</u>	<u>94.50</u>	<u>3'9"</u>	<u>3.75</u> <u>4.00</u>	<u>88.60</u>
" overhang					
Bridge enclosed. <u>(on R.Q.D.)</u>	<u>56.0'</u>	<u>56.00</u>	<u>11'</u>		<u>56.00</u>
" overhang aft ...					
" overhang forward					
F'cle enclosed ...	<u>23.5'</u>	<u>23.50</u>	<u>7'</u>	<u>3.00</u>	<u>23.50</u>
" overhang ...					
Trunk aft ...					
" forward ...					
Tonnage opening aft ...					
" forward					
Total ...	<u>174.00</u>	<u>174.00</u>			<u>168.10</u>

Standard Height of Superstructure 6.00
" " R.Q.D. 4.00
Deduction for complete superstructure 31.00
Percentage covered $\frac{S}{L} =$ 69.60%
" " $\frac{S_1}{L} =$ 69.60%
" " $\frac{E}{L} =$ 67.24%
Percentage from Table, Line A. 58.31
(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 = 31.00 x .5831 = - 18.08

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ...	<u>35.00</u>	1		<u>35.00</u>	<u>38.5</u>	<u>38.50</u>	1		<u>38.50</u>
1/4 L from A.P. ...	<u>15.34</u>	4		<u>62.28</u>	<u>16.00</u>	<u>15.80</u>	4		<u>63.20</u>
1/2 L " ...	<u>3.85</u>	2		<u>7.70</u>	<u>4.00</u>	<u>3.95</u>	2		<u>7.90</u>
Amidships ...		4			<u>0</u>		4		
3/4 L from F.P. ...	<u>4.70</u>	2		<u>15.40</u>	<u>7.75</u>	<u>8.00</u>	2		<u>16.00</u>
1/4 L " ...	<u>31.15</u>	4		<u>124.60</u>	<u>32.00</u>	<u>32.00</u>	4		<u>128.00</u>
F.P. ...	<u>70.00</u>	1		<u>70.00</u>	<u>78.00</u>	<u>78.00</u>	1		<u>78.00</u>
Total ...				<u>314.98</u>					<u>331.60</u>

Mean actual sheer aft = Excess
Mean standard sheer aft = Excess
Mean actual sheer forward = Excess
Mean standard sheer forward = Excess
Length of enclosed superstructure forward of amidships = > 1L
" " aft of " = .50 L

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{314.98}{18} \left(.75 - \frac{.402}{.348} \right) = -.37$
If limited on account of midship superstructure.
If limited to maximum allowance of 1 1/2 ins. per 100 ft.

Deduction for Tropical Freeboard.
Addition for Winter and Winter North Atlantic Freeboard.
R.Q.D.
Depth to Freeboard Deck = 20.53 Ft.
Summer freeboard = 5.02
Moulded draught (d) = 15.51
Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = 3.88 = 4"
Addition for Winter North Atlantic Freeboard (if required) = 2" + 4" = 6"

Deduction for Fresh Water.
Displacement in salt water at summer load water line
 $\Delta =$ 3131
Tons per inch immersion at summer load water line
 $T =$ 18.85
Deduction = $\frac{\Delta}{40 T}$ inches = 4.14
4 1/4"

TABULAR FREEBOARD corrected for Fresh Deck (if required)	
Correction for coefficient	$\frac{736 + .68}{1.36} = \frac{1.416}{1.36}$
Depth Correction ...	<u>.21</u>
Deduction for superstructures ...	<u>18.08</u>
Sheer correction ...	<u>.37</u>
Round of Beam correction ...	<u>.03</u>
Correction for Thickness of Deck amidships	
Other corrections, scantlings, etc.	<u>45.00</u>
	<u>45.21</u>
Summer Freeboard =	<u>60.36</u>

SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, Raised Quarter, Steel Deck :-

Tropical Fresh Water Line above Centre of Disc ...	<u>8 1/4"</u>	Tropical Fresh Water Freeboard ...	<u>5' 0 1/4"</u>
Fresh Water Line " "	<u>4 1/4"</u>	Fresh Water " "	<u>4' 4"</u>
Tropical Line " "	<u>4"</u>	Tropical " "	<u>4' 8"</u>
Winter Line below " "	<u>4"</u>	Winter " "	<u>4' 8 1/2"</u>
Winter North Atlantic Line " "	<u>6"</u>	Winter North Atlantic " "	<u>5' 6 1/4"</u>

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PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS									
Description of Hatchway	No 1	No 2	No 3	No 4	(2) Escape Hatch on Fore Well	(2) Escape Hatch on R.Q.D.	(2) Bunker Hatches on Br. Deck	A.P. Tank	
Dimensions of Hatchway	28' x 26'	29' x 26'	28' x 26'	28' x 26'	2'3" x 1'9"	2'3" x 1'9"	6' x 3'	17" dia	
COAMINGS	Height above Deck	4'	4'	3'6"	3'6"	18"	24"	18"	
	Thickness	4 1/4"	4 1/4"	4 1/4"	4 1/4"	4"	35"	4"	
	Stiffeners	BA. 1 1/2 x 4	Same	Same	Same	none	35"		
	Brackets, Stays	(15' down) 3 even	3 even	(15' down) 3"	3"	none	none		
HATCH BEAMS	Number	5	5	5	5				
	Spacing	even	even	even	even				
	Scantling and Sketch	19' x 3 1/2"	21' x 3 1/2"	20' x 3 1/2"	as No 3				
	Bearing Surface	3"	3"	3"	3"				
FORE AND AFTERS	Number	none	none	none	none				
	Spacing								
	Unsupported Lengths								
	Scantling* and Sketch								
HATCH COVERS	Material	W. Wood	W. Wood	W. Wood	W. Wood	W. Wood	W. Wood	Steel	
	Thickness	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	4"	
	How fitted	9 x 2	9 x 2	9 x 2	9 x 2	Portable	9 x 2	Portable	
	Bearing Surface	3 1/2"	3 1/2"	3 1/2"	3 1/2"	3"	3 1/2"	3"	
Spacing of Cleats	24"	24"	24"	24"	15"	15"	33"	Rolls 7 mts.	
Number of Tarpaulins	2	2	2	2	none	none	none	3 1/2" pitch	
<p>*Are wood fore and afters steel shod at all bearing surfaces? <i>Yes</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.
 Fiddle & funnel seats and coamings in efficient condition.
 B.R. Skylight of steel, strongly constructed.
 Bunker Hatch on Brck. casing top 4' x 14'6" x 12" coaming, fitted with strong steel hinged covers. 2 1/2" bearing surface.

Particulars of Flush Bunker Scuttles:—

none.

Particulars of Companionways:—

1 Steel Companionway 3'3" x 2'3" x 6'9" on Bridge Deck, leading to Enc.
 Bridge Space Accomodation; Leak Wood Hinged door 4'9" x 2', fitted with spring lock opening both sides. Sit 17"

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

(1) Vent on Forecastle Deck	6" dia	coaming 36" x 3"	led to Upper Peak Space	Temp. Closing Appliances to be fitted & produced.
(2) " " " "	8"	" 36" x 3"	Enc. Forecastle Accom.	
(2) " " Fore Well	12"	" 36" x 2 and 16"	Fore Hold Space	
(16) Mushrooms on Bridge	6"	" 6"	Enc. Br. Space. Accom.	
(2) Grooves	5"	" 4 1/2"	" "	
(2) Vents R.Q.D.	12"	" 36" x 25"	Aft Hold Space	
(1) " " " "	6"	" 36" x 3"	Tunnel	

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

(1) Air pipe on Forecastle Deck	3 1/2" dia x 9"	led to F.P. tank	no plugs or snifting holes. Efficient closing provided.	
(2) " " " " Fore Well	3"	x 3 1/6"		No 2 DB tank.
(1) " " " " " "	3"	x 9"		No 1 " "
(1) " " " " Bridge	1 1/2"	x 9"		F.W. " "
(2) " " " " R.Q.D.	3 1/2"	x 9"		No 3 " "
(2) " " " " R.Q.D.	3 1/2"	x 9"		No 4 " "
(1) " " " " R.Q.D.	3 1/2"	x 9"	A.P. tank	

Particulars of Gangway Cargo and Coaling Ports:—

none.

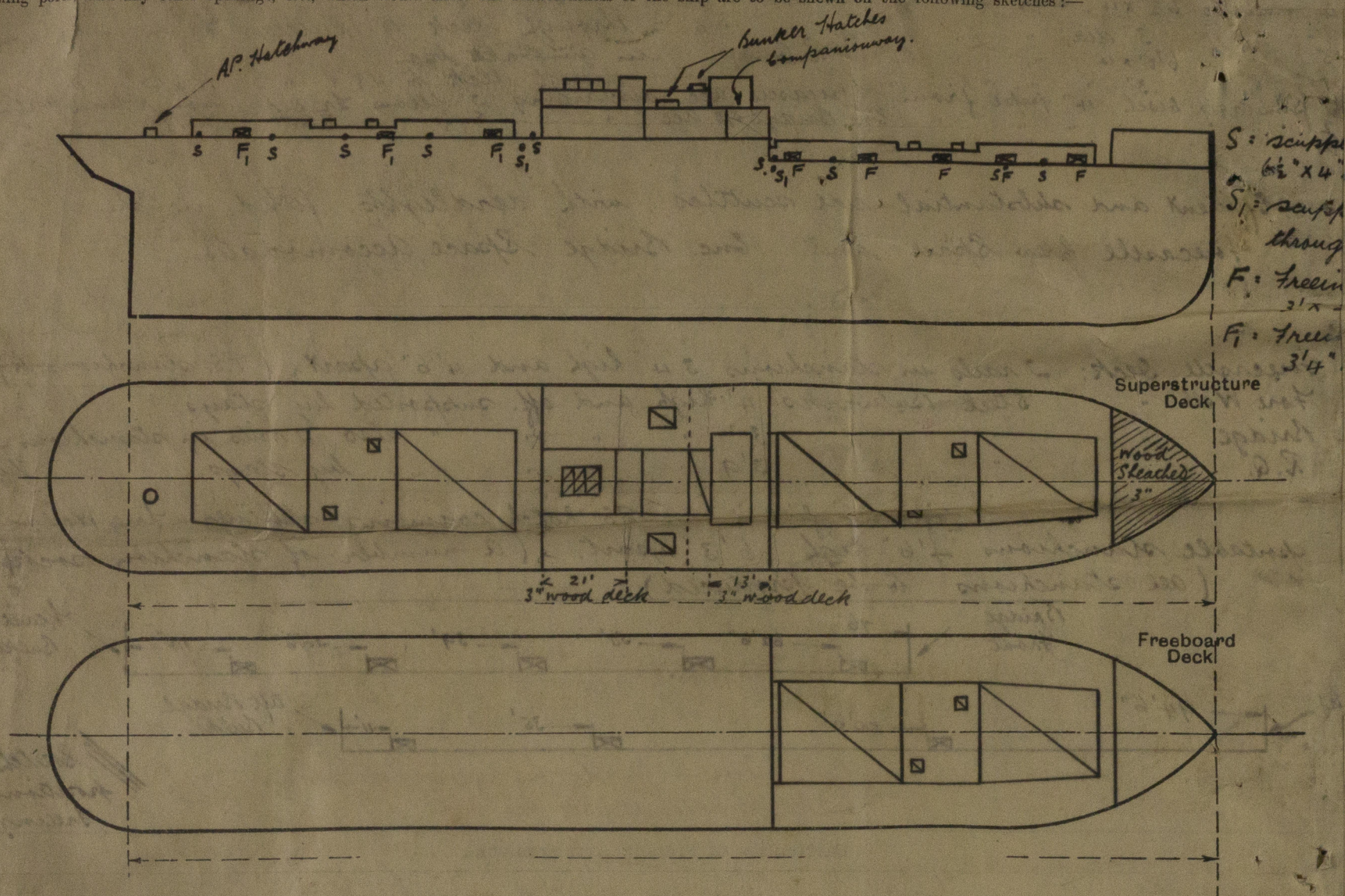


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Superstructure bulkheads, trunks, deckhouses, casings, cargo and coaling hatchways, extent and thickness of sheathing on the freeboard deck, gangway, coaling ports, and any other openings, etc., which would affect the seaworthiness of the ship are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



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

None

Vessel examined and measured afloat for Freeboard purposes: the S.S. No 2 has been partly held at this time. It is the Owners' intention to dry-dock the vessel next week, for completion of S.S.

Builder's name and yard number

Goole S.B. & Repairing Co.,

Names of sister ships

Owners

Buck Steam Shipping & Coal Exports Ltd.

Fee £

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