

WRECK SECTION No.

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

Computation of Freeboard for Steamer, Sailing Ship, Tanker

having *Forecastle and Raised Quarter Decks*

Port of Survey *Fleetwood*

Date of Survey *5.1.37.*

Name of Surveyor *W.S. Shilds*

Particulars of Classification ** 100 A1*
As HUL no 3, 7-27
As HUL no 2-35 Steam Trawler

(Type of Superstructures.)

Ship's Name *"DHOON"* Nationality and Port of Registry *British Fleetwood* Official Number *136 249* Gross Tonnage *323* Date of Build *1915*

Moulded Dimensions: Length *136' 8"* Breadth *23' 6"* Depth *13' 7"*

Moulded displacement at moulded draught = 85 per cent. of moulded depth *617* tons

Coefficient of fineness for use with Tables *.586* (*.68 lower*)

Depth for Freeboard (D)	Depth correction	Round of Beam correction
Moulded depth <i>13.58</i>	(a) Where D is greater than Table depth (D - Table depth) R = <i>(13.69 - 9.14) × 1.051 = +4.81</i>	Moulded Breadth (B) <i>23.37</i>
Stringer plate <i>.03</i>	(b) Where D is less than Table depth (if allowed) (Table depth - D) R = <i>4.58</i>	Standard Round of Beam = $\frac{B \times 12}{50} = 5.61$
Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) = .25 \times .306 = .08$	If restricted by superstructures <i>✓</i>	Ship's Round of Beam = <i>8.00</i>
Depth for Freeboard (D) = <i>✓ 13.69</i>		Difference <i>2.39</i>
		Restricted to
		Correction = $\frac{\text{Diff}^2}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{2.39^2}{4} \times .306 = .18$

DEDUCTION FOR SUPERSTRUCTURES.

Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)	Standard Height of Superstructure
Poop enclosed		<i>1.17 (width) × 1.17</i>	<i>3.245</i>	<i>3.245</i>	<i>6.0</i>
„ overhang					R.Q.D. <i>3.245</i>
R.Q.D. enclosed	<i>1.74</i>	<i>1.74</i>	<i>5.72</i>	<i>5.72</i>	Deduction for complete superstructure <i>19.67</i>
„ overhang					Percentage covered $\frac{S}{L} = 69.40$
Bridge enclosed					$\frac{S_1}{L} = 69.40$
„ overhang aft					$\frac{E}{L} = 33.98$
„ overhang forward					Percentage from Table, Line A. <i>18.38</i>
F'cle enclosed	<i>20.67</i>	<i>20.67</i>	<i>5.72</i>	<i>5.72</i>	(corrected for absence of forecastle (if required))
„ overhang					Percentage from Table, Line B. <i>✓</i>
Trunk aft					(corrected for absence of forecastle (if required))
„ forward					Interpolation for bridge less than 2L (if required)
Tonnage opening aft					Deduction = <i>19.67 × 18.38 = -3.61</i>
„ „ forward					
Total	<i>✓ 94.84</i>	<i>✓ 94.84</i>		<i>46.44</i>	

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product	Mean actual sheer aft
A.P.	<i>23.67</i>	1		<i>23.67</i>	<i>53.0</i>	<i>23.67</i>	1		<i>23.67</i>	Mean standard sheer aft
$\frac{1}{2}$ L from A.P.	<i>10.535</i>	4		<i>42.14</i>	<i>22.5</i>	<i>10.535</i>	4		<i>42.14</i>	Mean actual sheer forward
$\frac{2}{3}$ L „	<i>2.605</i>	2		<i>5.21</i>	<i>5.0</i>	<i>2.605</i>	2		<i>5.21</i>	Mean standard sheer forward
Amidships		4					4			Length of enclosed superstructure forward of amidships =
$\frac{2}{3}$ L from F.P.	<i>5.21</i>	2		<i>10.42</i>	<i>5.0</i>	<i>5.0</i>	2		<i>10.00</i>	„ „ aft of „ =
$\frac{1}{2}$ L „	<i>21.07</i>	4		<i>84.28</i>	<i>21.5</i>	<i>21.5</i>	4		<i>86.00</i>	
F.P.	<i>47.34</i>	1		<i>47.34</i>	<i>43.0</i>	<i>43.0</i>	1		<i>43.00</i>	
Total				<i>213.06</i>					<i>210.02</i>	

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{3.04}{18} \left(.75 - \frac{.347}{2} \right) = +.07$

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 = *✓ 14.86*

Summer freeboard = *✓ 2.46*

Moulded draught (d) = *✓ 12.40*

Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = *3.10 = 3*

Addition for Winter North Atlantic Freeboard (if required) = *5*

Deduction for Fresh Water.

Displacement in salt water at summer load water line

$\Delta = 680.683$

Tons per inch immersion at summer load water line

T = *6.1*

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

= *2.79*

= *2 3/4*

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient

	+	-
Depth Correction	<i>✓ 4.81</i>	
Deduction for superstructures		<i>3.61</i>
Sheer correction	<i>✓ .07</i>	
Round of Beam correction		<i>.18</i>
Correction for Thickness of Deck amidships	<i>✓ 14.04</i>	
Other corrections, scantlings, etc.		<i>.79</i>
	<i>✓ 18.92</i>	<i>3.32</i>

Summer Freeboard = *29.40* *28.93*

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

Tropical Fresh Water Line above Centre of Disc	<i>5 3/4</i>
Fresh Water Line „ „	<i>2 3/4</i>
Tropical Line „ „	<i>3</i>
Winter Line below „ „	<i>3</i>
Winter North Atlantic Line „ „	<i>5</i>

Tropical Fresh Water Freeboard	<i>2-5</i>
Fresh Water „ „	<i>2-2 3/4</i>
Tropical „ „	<i>2-2</i>
Winter „ „	<i>2-8</i>
Winter North Atlantic „ „	<i>2-10</i>

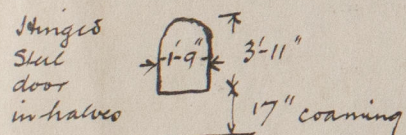
PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS										
Description of Hatchway	N ^o 1	N ^o 2	N ^o 3	N ^o 4	N ^o 5					
Dimensions of Hatchway	3' 3" x 2' 6"	3' 1/2" x 3' 2"	3' 2" x 3' 2"	3' 2" x 3' 1/2"	3' 2" x 3' 1/2"					
COAMINGS	Height above Deck	15"	15"	15"	15"					
	Thickness Sides	3/8"	3/8"	3/8"	3/8"					
	Thickness Ends	3/8"	3/8"	3/8"	3/8"					
	Stiffeners	nil	nil	nil	nil					
HATCH BEAMS	Brackets, Stays	nil	nil	nil	nil					
	Number	nil	✓	✓	✓					
	Spacing	nil	✓	✓	✓					
	Scantling and Sketch	nil	✓	✓	✓					
FORE AND AFTERS	Bearing Surface	✓	✓	✓	✓					
	Number	✓	✓	✓	✓					
	Spacing	✓	✓	✓	✓					
	Unsupported Lengths	✓	✓	✓	✓					
HATCH COVERS	Scantling and Sketch	✓	✓	✓	✓					
	Bearing Surface	✓	✓	✓	✓					
	Material	W.P.	W.P.	W.P.	W.P.					
	Thickness	2 3/4"	2 3/4"	2 3/4"	2 3/4"					
Spacing of Cleats	How fitted	Athwart	Athwart	Athwart	Athwart					
	Bearing Surface	1 1/4"	1 1/4"	1 1/4"	1 1/4"					
	Number of Tarpaulins	2	2	2	2					
	Spacing	2'-1" max	2'-1" max	2'-1" max	2'-1" max					

Particulars of fiddle, funnel and ventilator coamings:— Casing top, fiddle, grating, engine room skylight and vent. in good and efficient condition. Fiddle and boiler top escape hatches fitted with efficient steel storm covers (hinges).

Particulars of Flush Bunker Scuttles:— 9 flush cast iron bunker scuttles are fitted to bunkers amidships. These are secured by bayonet joint and are of efficient construction but are not secured in place by chain.

Particulars of Companionways:— Companionways to Crews quarters of steel in good & efficient condition, strongly constructed. Door to forward companionway of steel strongly constructed in good & efficient condition, operated from both sides and in order. Door to aft companionway and engine room similar.



Particulars of Ventilators in exposed positions on freeboard and superstructure decks:— None except two mushroom vents on forward and aft skylights over crews quarters - see sketch on back page.

Particulars of Air Pipes in exposed positions on freeboard, raised quarter, or superstructure decks:— Air and filling pipe to F.W. tank on main deck forward 2 1/2" dia, 19 1/2" high supported by strong wood block and closed by steel plug (screws).

Particulars of Gangway Cargo and Coaling Ports:—

Particulars of Scuppers and Sanitary Discharge Pipes:— No scuppers or sanitary discharges below freeboard deck.

Particulars of Side Scuttles:— No side scuttles are fitted below freeboard deck.

Particulars of Guard Rails:— Bulwark 2'-6" high above raised quarter deck & 3'-6" above main deck with suitable stays & rail bar is fitted. On fore-castle deck open hand rails fitted 3 rods, pitches 3'-6" and 3'-3" high.

Particulars of Gangways, Lifelines, etc.:— Efficient steel wire lifelines are fitted from forward to aft both sides shackles from forward galleys to after galleys & from aft galleys to deck house at Counter. Wire runs through efficient stanchions on bulwark rails.

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	74'-2"	2'-6"	1'-6" x 9"	three	3.37 sf.	
Forward Well	41'-10"	3'-6"	1'-9" x 1'-0"	one	1.75 sf.	

State position of each freeing port ... After Well:— 6" above R.Q.D. N^o 1-17'-7", N^o 2-35'-10", N^o 3-56'-0" aft of R.Q.D. (F. and A. position and height above deck edge) } Forward Well:— 1'-6" fore of R.Q.D. bulks (P & S) with 1" rod. Shutters fitted.

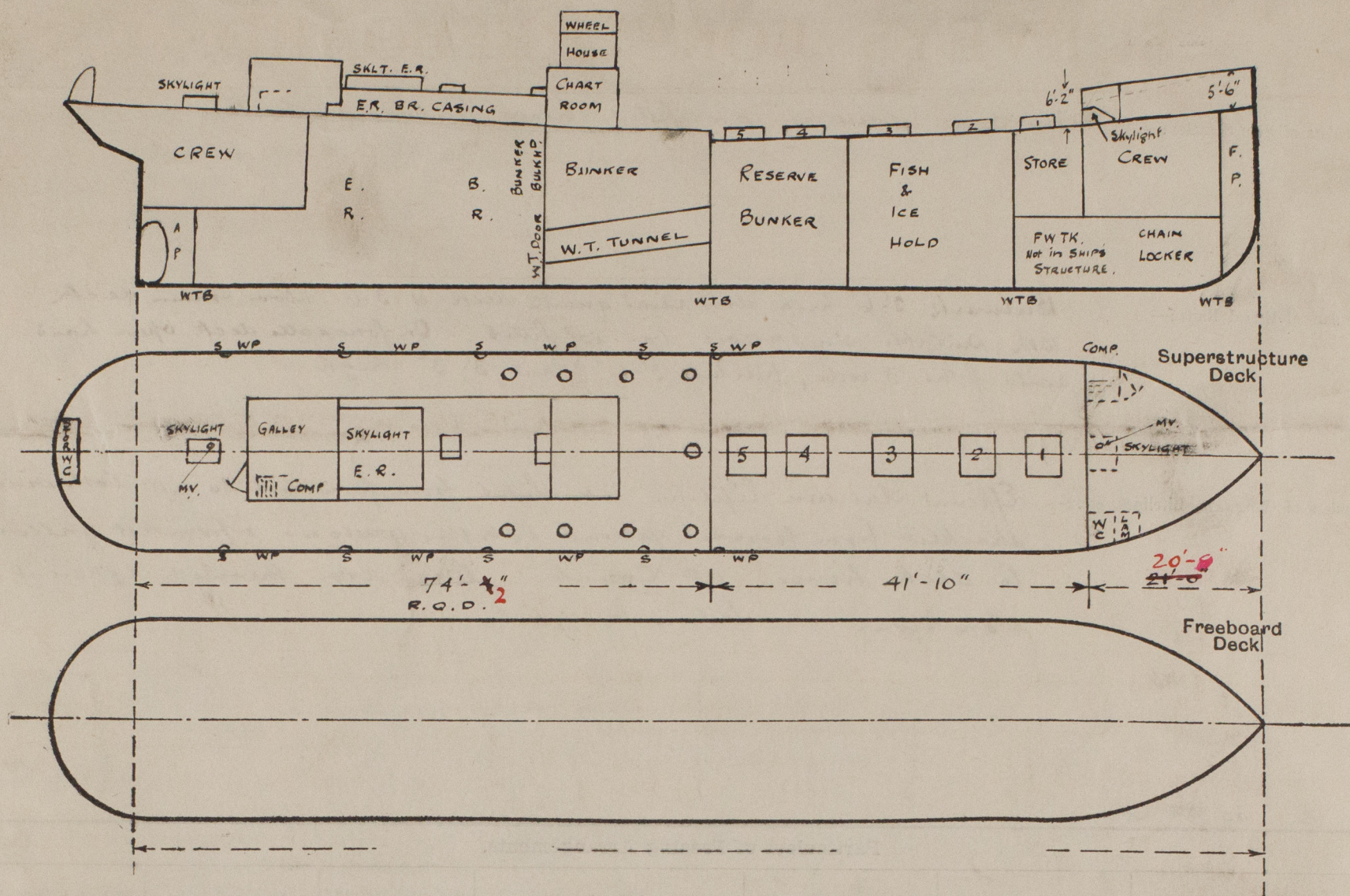
State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such:—

Additional area where sheer is less than standard.

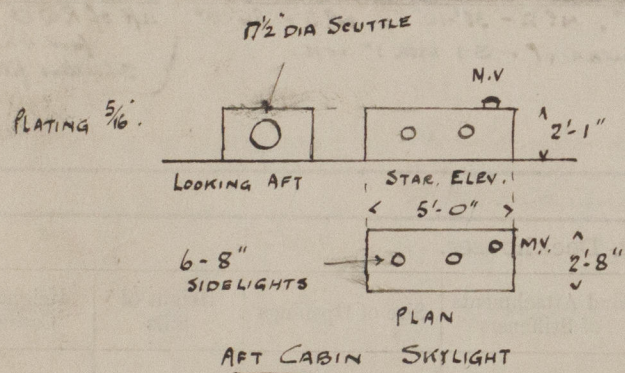
Particulars of Superstructures, Trunks, Casings, Deckhouses.								
	Coaming	Plating	Stiffeners	Spacing	End Attachments of Stiffeners	Size of Openings	Height of Sills	Height of Casings
Poop Bulkhead	✓							
Raised Quarter Deck Bulkhead	3/8"	5/16"	5 1/2" x 3 x 5/16"	28"	Knees at 2 stiff 22" x 2 1/4" in song of which.	None	None	12"
Bridge, After Bulkhead	✓							
Bridge, Forward Bulkhead	1/4"	1/4"	None	✓	✓	3'-11" x 1'-9"	19"	6'-2"
Fore-castle Bulkhead	✓							
Trunk, Aft	✓							
Trunk, Forward	✓							
Exposed Machinery Casings on Freeboard or Raised Quarter Deck	3/8"	5/16"	3 1/2" x 2 1/2" x 5/16"	2'-6"	Hangers to casing tops	Efficient steel skylight 22" x 11" x 1'-9" companionway aft	17"	6'-9" 4'-1"
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	✓
Bridge, After Bulkhead	✓
Bridge, Forward Bulkhead	At companionway forward there is an efficient steel door in halves, hinges, operates both sides.
Fore-castle Bulkhead	✓
Exposed Machinery Casings on Freeboard or Raised Quarter Decks	✓
Exposed Machinery Casings on Superstructure Decks	At companionway aft there is an efficient steel door in halves, hinges, operates both sides.
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	✓
Deckhouses on Flush Deck Ships	✓

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:—



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



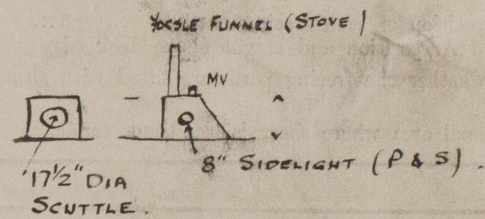
Whaleback.

At after end:

$$\begin{aligned} \text{Height above upper } &= 6.17' \\ \text{Difference at center } &= 4.50 \\ \text{Height at side } &= 1.67 \times \frac{2}{3} = 1.11 \end{aligned}$$

Height at forward end =

$$\begin{aligned} + \text{Difference between actual } &= \frac{4.50}{5.61} \checkmark \\ &= \frac{5.50}{5.55} \checkmark \\ &= \frac{2 \times 11.11}{5.55} \checkmark \\ &= \frac{17}{5.72} \checkmark \\ &= \text{allows men height.} \end{aligned}$$



Builder's name and yard number Cochrane & Sons Ltd. No. 636.

Names of sister ships

Owners Wyre Steam Trawler Co. Ltd.

Fee £ 6 Received by me



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Foundation