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002249-002259-00531

Req. 9 attached

CARDIFF L9.645

23 APR 1932

Index. No. 23871
(For London Office only.)

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

Computation of Freeboard for Steamer, Sailing Ship, Tanker
having Raised Q. Deck, Bridge & F. Deck

Port of Survey Cardiff

Date of Survey 21st, 22nd April 1932

Name of Surveyor W. B. Marlborough

Particulars of Classification + 20 A.1

Ship's Name	Nationality and Port of Registry	Official Number	Gross Tonnage	Date of Build
<u>"J. DUNCAN"</u>	<u>British</u> <u>Cardiff</u>	<u>136938</u> <u>24415</u>	<u>1833</u>	<u>1914</u> <u>10 mths</u>

Moulded Dimensions: Length 259.00 Breadth 38.25 Depth 18.58

Moulded displacement at moulded draught = 85 per cent. of moulded depth 3339 tons

Coefficient of fineness for use with Tables 7425

Depth for Freeboard (D)	Depth correction	Round of Beam correction
Moulded depth <u>18.58</u>	(a) Where D is greater than Table depth (D - Table depth) R = $(18.58 - 17.32) \times 2.000$ <u>= 2.60</u>	Moulded Breadth (B) <u>38.25</u>
Stringer plate <u>(.50)</u> <u>.04</u>	(b) Where D is less than Table depth (if allowed) (Table depth - D) R =	Standard Round of Beam = $\frac{B \times 12}{50} = \frac{38.25 \times 12}{50} = 9.18$
Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$ <u>✓</u>	If restricted by superstructures	Ship's Round of Beam = <u>9.18</u>
Depth for Freeboard (D) = <u>18.62</u>		Difference <u>.32</u>
		Restricted to
		Correction = $\frac{\text{Diff}^e}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{.32}{4} \left(1 - \frac{7.075}{25.98} \right) = .02$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Roop enclosed					
... overhang					
R.Q.D. enclosed	<u>94.62</u>	<u>97.62</u>	<u>4.75</u>		<u>97.62</u>
... overhang					
Bridge enclosed	<u>50.56</u>	<u>57.75</u>	<u>7.50</u>	<u>3.00</u>	<u>57.75</u>
... overhang aft	<u>5.58</u>				
... overhang forward	<u>5.75</u>				
Fore-cle enclosed	<u>25.98</u>	<u>25.98</u>	<u>7.50</u>	<u>3.00</u>	<u>25.98</u>
... overhang	<u>5.02</u>	<u>2.51</u>			<u>2.51</u>
Trunk aft					
... forward					
Tonnage opening aft					
... forward					
Total	<u>186.87</u>	<u>183.86</u>			<u>183.86</u>

Standard Height of Superstructure 6.10

" " R.Q.D. 4.129

Deduction for complete superstructure 31.98

Percentage covered $\frac{S}{L} = .7174$

" " $\frac{S_1}{L} = .7075$

" " $\frac{E}{L} = .7075$

Percentage from Table, Line A.
(corrected for absence of forecastle (if required))

Percentage from Table, Line B. 63.92
(corrected for absence of forecastle (if required))

Interpolation for bridge less than 2L (if required)

Deduction = 20.44

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P.	<u>35.98</u>	<u>1</u>	<u>✓</u>	<u>35.98</u>	<u>51.00</u>	<u>51.00</u>	<u>1</u>	<u>✓</u>	<u>51.00</u>
$\frac{1}{2}$ L from A.P.	<u>16.02</u>	<u>4</u>	<u>✓</u>	<u>64.08</u>	<u>22.91</u>	<u>22.91</u>	<u>4</u>	<u>✓</u>	<u>91.64</u>
$\frac{2}{3}$ L "	<u>3.96</u>	<u>2</u>	<u>✓</u>	<u>7.92</u>	<u>5.41</u>	<u>5.41</u>	<u>2</u>	<u>✓</u>	<u>10.82</u>
Amidships	<u>✓</u>	<u>4</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>4</u>	<u>✓</u>	<u>✓</u>
$\frac{2}{3}$ L from F.P.	<u>7.92</u>	<u>2</u>	<u>✓</u>	<u>15.84</u>	<u>10.34</u>	<u>10.34</u>	<u>2</u>	<u>✓</u>	<u>20.68</u>
$\frac{1}{2}$ L "	<u>32.03</u>	<u>4</u>	<u>✓</u>	<u>128.12</u>	<u>41.44</u>	<u>41.44</u>	<u>4</u>	<u>✓</u>	<u>165.76</u>
F.P.	<u>71.96</u>	<u>1</u>	<u>✓</u>	<u>71.96</u>	<u>93.00</u>	<u>93.00</u>	<u>1</u>	<u>✓</u>	<u>93.00</u>
Total				<u>323.90</u>					<u>454.90</u>

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{131.00}{18} \left(.75 - \frac{3587}{20} \right) = 2.84 \times \frac{19.2}{20} = 2.73$

If limited on account of midship superstructure. Yes.

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)
Addition for Winter and Winter North Atlantic Freeboard.	Displacement in salt water at summer load water line	Correction for coefficient $\frac{7425 + 68}{1.36} = 1.046$
Depth to Freeboard Deck = <u>18.62</u>	$\Delta = 36.72$	Depth Correction <u>2.60</u>
Summer freeboard = <u>1.52</u>	Tons per inch immersion at summer load water line	Deduction for superstructures <u>20.44</u>
Moulded draught (d) = <u>17.08</u>	T = <u>20.0</u>	Sheer correction <u>2.73</u>
Deduction for Tropical freeboard and addition for	Deduction = $\frac{\Delta}{40}$ inches	Round of Beam correction <u>.02</u>
Winter freeboard = $\frac{d}{4}$ inches = <u>4.33</u>	= <u>4.59</u>	Correction for Thickness of Deck amidships <u>3"</u>
Addition for Winter North Atlantic Freeboard (if required) = <u>2</u>	<u>4.2</u>	Other corrections, scantlings, etc.
		Summer Freeboard = <u>18.84</u>

SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line

Tropical Fresh Water Line above Centre of Disc	<u>8.4</u>	Tropical Fresh Water Freeboard	<u>1.6</u>
Fresh Water Line " "	<u>4.2</u>	Fresh Water " "	<u>1.9</u>
Tropical Line " "	<u>4.4</u>	Tropical " "	<u>1.2</u>
Winter Line below " "	<u>4.4</u>	Winter " "	<u>1.0</u>
Winter North Atlantic Line " "	<u>6.4</u>	Winter North Atlantic " "	<u>2.0</u>

2 MAY 1932

MARKING FORM
2 MAY 1935
RECEIVED
OCT 1935

PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS									
* FORE DECK * RAISED QUARTER DECK * FORE DECK *									
Description of Hatchway		No 1	No 2	No 3	No 4	CROSS BUNKER			
Dimensions of Hatchway		24'10 1/2" x 26'1"	24'10 1/2" x 26'1"	26'10 1/2" x 25'8"	24'15" x 22'6"	4'0" x 19'0"			
COAMINGS	Height above Deck	4' 7"	4' 7"	4' 0"	4' 0"	4' 7"			
	Thickness	.46	.46	.48	.48	.36			
	Sides	.40	.40	.40	.40	.36			
	Ends	.40	.40	.40	.40	.36			
COAMINGS	Stiffeners	4x3x35 BA	4x3x35 BA	4x3x35 BA	4x3x35 BA	NONE			
	Brackets, Stays	34 F.P. STAYS 9'0" APART	34 F.P. STAYS 9'0" APART	34 F.P. STAYS 9'0" APART	34 F.P. STAYS 9'0" APART	NONE			
HATCH BEAM	Number	2	2	2	2	✓			
	Spacing	8' 3 1/2"	8' 3 1/2"	8' 11 1/2"	9' 0 1/2"	✓			
	Scantling and Sketch	4x4x34 Plak 35x40 9x50 BULB PLT	4x4x30 Plak 35x40 9x50 BULB PLT	4x4x34 Plak 35x40 9x50 BULB PLT	4x4x34 Plak 35x40 9x50 BULB PLT	✓ ✓ ✓			
	Bearing Surface	3"	3"	3"	3"	✓			
FORE AND AFTERS	Number	5	5	5	5	✓			
	Spacing	4' 4"	4' 4"	4' 3 1/2"	4' 3 1/2"	✓			
	Unsupported Lengths	8' 3 1/2"	8' 3 1/2"	8' 11 1/2"	9' 0 1/2"	✓			
	Scantling* and Sketch	3 off A 2 off B Pitch Pms	3 off A 2 off B Pitch Pms	3 off A 2 off B Pitch Pms	3 off A 2 off B Pitch Pms	✓ ✓ ✓			
FORE AND AFTERS	Bearing Surface	2 3/4"	2 3/4"	2 3/4"	2 3/4"	✓			
HATCH COVERS	Material	W. P.	W. P.	W. P.	W. P.	W. P.			
	Thickness	3"	3"	3"	3"	3"			
	How fitted	Thwart	Thwart	Thwart	Thwart	FTA			
	Bearing Surface	2 1/2 x 4"	2 1/2 x 4"	2 1/2 x 4"	2 1/2 x 4"	2 1/2"			
Spacing of Cleats		24"	24"	24"	24"	28"			
Number of Tarpaulins		3	3	3	3	3			

*Are wood fore and afters steel shod at all bearing surfaces? *Yes*

Are battens and wedges efficient and in good condition? *Yes*

Are tarpaulins in good condition and in accordance with rule requirements? *Yes*

Are lashings provided in accordance with rule requirements? *Yes*

Particulars of fiddley, funnel and ventilator coamings:—

Fidley, Tunnel & Ventilator Coamings in efficient condition.
Engine Room Skylight of Steel strongly constructed.
Stokehold Gratings covered by strong steel hinged storm covers.

Particulars of Flush Bunker Scuttles:—

NONE. ✓

Particulars of Companionways :—

2 On Bridge Deck P.S. side 4'0" x 2'8" x 5'6" high of steel opening 4'3" x 2'0", 12" Sill
fitted with single Teak door 2" thick ✓
1 On 3rd Deck under Pile No. 6 to Crews Quarters 4'0" x 3'0" x 4'6" high of steel opening 5'0" x 2'0", 16" Sill
fitted with single Teak door 2" thick ✓
1 On Raised Q? Deck aft to Firemen Quarters 4'5" x 3'0" x 5'9" high of Steel, opening 3'9" x 2'0", 18" Sill
fitted with single Teak door 2" thick ✓

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

Particulars of Ventilators in exposed positions on freeboard and superstructure

Fore D ^K	One to Hold	18" dia ⁷ x 3'0" high x 32
Fore D ^K	Two on Winch Platform to Hold	18" dia ⁷ x 3'1" above D ^K x 32
" "	1 to Hold	18" dia ⁷ x 3'0" high x 32
" "	Two to Bunker	8" dia ⁷ x 2'6" high x 30
R ^o Q ^r D ^K	One to Hold	18" dia ⁷ x 3'0" high x 32
" "	Two on Winch Platform to Hold	18" dia ⁷ x 3'1" above D ^K x 32
" "	One to Hold	18" dia ⁷ x 3'0" high x 32
" " "	1 to Tunnel	9" dia ⁷ x 2'6" high x 30

Ventilators constructed in accordance
with rule requirements, Coamings closed
with Wood Plugs and Canvas Covers. ✓

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

Particulars of Air Pipes in exposed positions on freeboard, raised quarter, or superstructure decks :-									
1	C.1.	Air Pipes on Fore Deck under 4 ft 3 in high x 3 dia.	from Fore Peak	number 1	Forecastle.				
2	C.1	" " " "	36" x 3	"	N ^o 1 Tank	in C ^o of ship	against	Chain Lockers	Hatch
2	C.1	" " " "	36" x 4	"	N ^o 2	"	against	Bulwark	
2	C.1	" " " Bridge OK	2.6" x 2 1/2	"	N ^o 3	"	Casing Side		
2	C.1	" " " R.Q. OK	2.6" x 2 1/2	"	N ^o 4	"	Bridge End	B nd	with one flying hole
2	C.1	" " " "	1.8" x 4	"	N ^o 5	"	Bulwark		
2	C.1	" " " "	36" x 4	"	N ^o 6	"	After Peak Tank		

all Goose-neck Lops
thought measured to
mouth.
No snifting holes or
closing arrangements
provided.

Particulars of Gangway Cargo and Coaling Ports :—

NONE

23 APR 1932

STORM VALVES FITTED

{ 1 Sanitary Discharge P.S from Hole 4th die? led through side above Treeboard DK
 { 2 Starts " Bridge 4 " " " "
 { 1 Port " " " " "
 4 Scupper P.S on R.Q.DK through Stringer Bar
 3 " " Fore " " "

Particulars of Side Scuttles :

In Seamen's Quarters Forward below Treeboard Deck also Firemen's quarters aft.
of substantial construction and fitted with
strong hinged Deadlights
In Bridge accommodation no Deadlights are fitted -X.

Particulars of Guard Rails :—

Guara Rails on Felt. Dk 3' 2" high with 3 Rails, 4' 6" apart.
 Stal Bulwark full length of Bridge 3' 0" high also along fore and aft
 ends with opening for ladder way. efficiently constructed and supported.
 X. The distance of the sill of the lowest side scuttle forward is 1' 6"
 below the foreward dkk

Particulars of Gangways, Lifelines, etc. :—

~~NONE~~

Provision is made for digging lifelines
port star in forward well

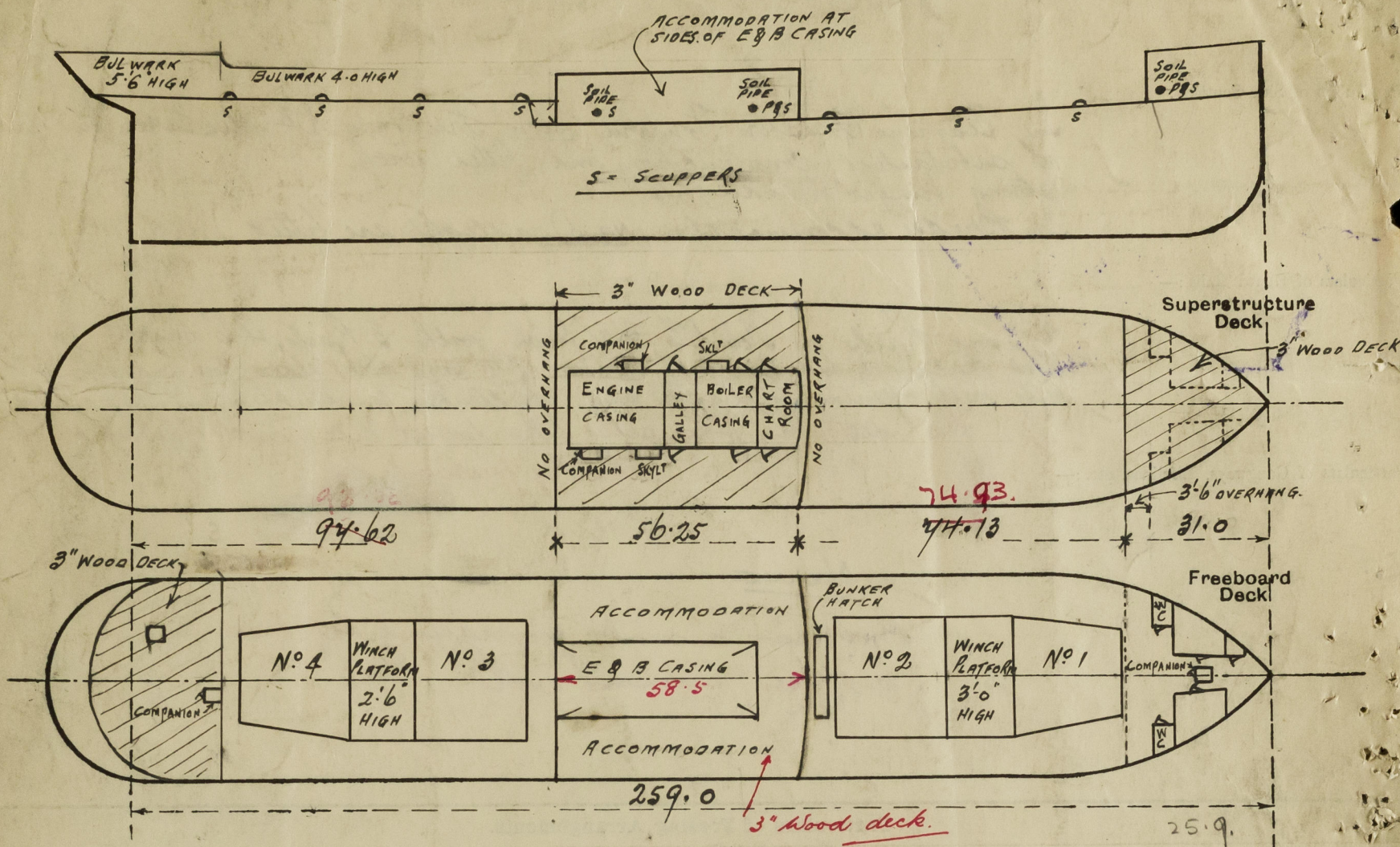
Particulars of Freeing Arrangements.						
	Length of Bulwark	Height of Bulwark	Size of Freeing Ports	Number each side	Area each side	Rule area each side
After Well	80' 8" 97.62	4'-0"	3'-0" x 1'-8" 20" x 20"	3 2	15.00 20 1/2	19.47 ^{52.}
Forward Well	48' 4" 74.93	5'-0"	3'-0" x 1'-8"	3	15.00	14.93
<p>State position of each freeing port { After Well:— 15'-8", 38'-0", 60'-4" measured from Bridge Rnd 5' above OK</p> <p>(F. and A. position and height above deck edge) { Forward Well:— 6'-3", 28'-4", 51'-0" " " " 12" " "</p> <p>State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such:— hinged Shutters.</p> <p>Additional area where sheer is less than standard.</p>						

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	✓	30	3" x 3" x 40	2' 3"	None	None	✓	2' 9" ABOVE R. Q. DECK
Bridge, After Bulkhead		32	6 1/2" x 3 1/2" x 36A	3' 0"	SHOED AT FOOT + RIVE TO DECK	"	✓	✓
Bridge, Forward Bulkhead		30	FLANGED PLATE 3"	"	None	5' 0" x 2' 0" SEE SKETCH	15"	4' 1/6"
Forecastle Bulkhead	✓							
Trunk, Aft								
Trunk, Forward	✓							
Exposed Machinery Casings on Free- board or Raised Quarter Decks	✓							
Exposed Machinery Casings on Super- structure Decks		32	3" FLANGED PLATE	36"	None	2' 9" x 2' 5" 5' 0" x 2' 0"	18"	4' 9" ABOVE WOOD DECK
Machinery Casings within Superstruc- tures not fitted with Class I Closing Appliances	Intact Bridge erection							
Deckhouses on Flush Deck Ships								

Particulars of Closing Appliances (state if capable of being manipulated from both sides).	
Poop Bulkhead	✓
Raised Quarter Deck Bulkhead ...	✓ <i>No openings</i>
Bridge, After Bulkhead	None ✓ <i>No openings</i>
Bridge, Forward Bulkhead	None ✓ <i>No openings</i>
Forecastle Bulkhead	In Sketch <i>2" Leak doors. (See House)</i>
Exposed Machinery Casings on Free-board or Raised Quarter Decks ...	✓ <i>open</i>
Exposed Machinery Casings on Superstructure Decks	<i>Steel hinged door worked both sides -</i>
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	✓
Deckhouses on Flush Deck Ships ...	✓

J. Duncan

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:—



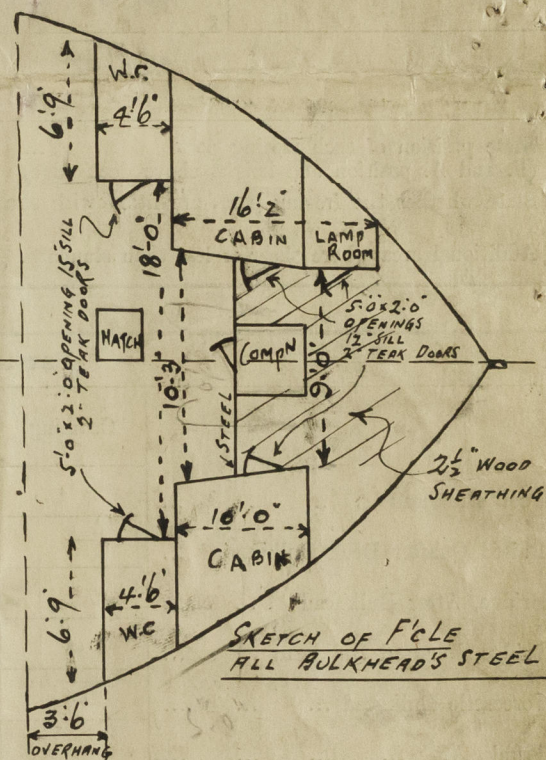
State any special features in the construction of the ship:—

Hatch to Store on Raised Q¹ Deck aft
2'3" x 2'3" x 1'3" high x 30 cleats 18" apart, 2 Larps }
2' lower Reaming surface 2"
Hatch to Chain Locker on For² St under Pile
2'3" x 2'0" x 1'6" high x 30, cleats 20" apart, 2 Larps 2' lower }
Reaming surface 2"

The following information was received on Board.

Draft	Deadweight
17'5"	2382 Tons
16'8"	2200
15'10"	2000
15'0"	1800
14'2"	1600
13'3½"	1400

This vessel is laid up and has been measured afloat



Builder's name and yard number

Names of sister ships

Owners J. Duncan & S. Co. Ltd., Cardiff

Fee £ 9 4 0

Received by me



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