

Order 23719
33933

Reg 9 attached

File No 106

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Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

Computation of Freeboard for Steamer, *Sailing Ship, Tug*
having *Pop. Bridge and Forecastle*

Port of Survey *HULL (Goole)*

Date of Survey *14th July 1932*

Name of Surveyor *G. Moffatt*

Particulars of Classification *4100 A1*

Ship's Name *"Aire"*

Nationality and Port of Registry *Br. Goole*

Official Number *161049*

Gross Tonnage *1116*

Date of Build *1931*

Moulded Dimensions: Length *240'* Breadth *34.0* Depth *16.52' 44"*

Moulded displacement at moulded draught = 85 per cent. of moulded depth *2223* tons

Coefficient of fineness for use with Tables *.682*

Depth for Freeboard (D) *16.52'*

Stringer plate *(Doubled 1/8" amid.)*

Sheathing on exposed deck *T (L-S)/L =*

Depth for Freeboard (D) = *16.48*

Depth correction

(a) Where D is greater than Table depth (D-Table depth) R = *(16.48-16.00) 1.846 = .89*

(b) Where D is less than Table depth (if allowed) (Table depth-D) R =

If restricted by superstructures

Round of Beam correction

Moulded Breadth (B) *34*

Standard Round of Beam = $\frac{B \times 12}{50} = \frac{34 \times 12}{50} = 8.16$

Ship's Round of Beam = *8.2*

Difference *.04*

Restricted to

Correction = $\frac{\text{Diff.}}{4} \times (1 - \frac{S_1}{L}) = \frac{.04}{4} \times (1 - \frac{.34}{240}) = .01$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)	
Pop. enclosed ...	<i>21.08</i>	<i>21.08</i>	<i>8'</i>		<i>21.08</i>	
" overhang ...	<i>17.62</i>	<i>8.71</i>	<i>8'</i>		<i>8.71</i>	
R.Q.D. enclosed ...						
" overhang ...						
Bridge enclosed ...	<i>84.50</i>	<i>63.37</i>	<i>8'</i>		<i>63.37</i>	
" overhang aft ...						
" overhang forward ...						
F'cle enclosed ...	<i>19.90</i>	<i>19.90</i>	<i>8'</i>		<i>19.90</i>	
" overhang ...	<i>12.68</i>	<i>9.35</i>	<i>8'</i>		<i>9.35</i>	
Trunk aft ...						
" forward ...						
Tonnage opening aft ...						
" forward ...						
Total ...	<i>157.50</i>	<i>122.41</i>			<i>122.41</i>	

Standard Height of Superstructure *6.0*

" " R.Q.D.

Deduction for complete superstructure *30.0*

Percentage covered $\frac{S}{L} = \frac{157.50}{240} = 65.62$

" " $\frac{S_1}{L} = \frac{122.41}{240} = 51.01$

" " $\frac{E}{L} = \frac{122.41}{240} = 51.01$

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

Percentage from Table, Line B. *37.01* (corrected for absence of forecastle (if required))

Interpolation for bridge less than 2L (if required)

Deduction = *11.10*

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product	Mean actual sheer aft	Mean standard sheer aft
A.P. ...	<i>34.00</i>	<i>1</i>	<i>34.00</i>	<i>38.00</i>	<i>38.00</i>	<i>38.00</i>	<i>1</i>	<i>38.00</i>	<i>38.00</i>		
1/4 L from A.P. ...	<i>15.13</i>	<i>4</i>	<i>60.52</i>	<i>18.00</i>	<i>17.80</i>	<i>17.80</i>	<i>4</i>	<i>69.52</i>	<i>69.52</i>		
1/2 L " ...	<i>3.74</i>	<i>2</i>	<i>7.48</i>	<i>3.50</i>	<i>4.34</i>	<i>4.34</i>	<i>2</i>	<i>8.68</i>	<i>8.68</i>		
Amidships ...		<i>4</i>		<i>0</i>			<i>4</i>				
3/4 L from F.P. ...	<i>7.48</i>	<i>2</i>	<i>14.96</i>	<i>8.25</i>	<i>8.29</i>	<i>8.29</i>	<i>2</i>	<i>16.58</i>	<i>16.58</i>		
1/4 L " ...	<i>30.26</i>	<i>4</i>	<i>121.04</i>	<i>33.50</i>	<i>33.18</i>	<i>33.18</i>	<i>4</i>	<i>132.72</i>	<i>132.72</i>		
F.P. ...	<i>68.00</i>	<i>1</i>	<i>68.00</i>	<i>73.50</i>	<i>73.50</i>	<i>73.50</i>	<i>1</i>	<i>73.50</i>	<i>73.50</i>		
Total ...			<i>306.00</i>					<i>339.00</i>	<i>339.00</i>		

Correction = $\frac{\text{Difference between sums of products}}{18} = \frac{33.00}{18} = 1.83$

If limited on account of midship superstructure = *0*

Mean actual sheer aft = *Excess*

Mean actual sheer forward = *Excess*

Mean standard sheer forward = *Excess*

Length of enclosed superstructure forward of amidships = *Open Bridge*

" " aft of " =

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.

Depth to Freeboard Deck = *16.53*

Summer freeboard = *1.73*

Moulded draught (d) = *14.80*

Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = $\frac{14.80}{4} = 3.70 = 3 \frac{3}{4}$

Addition for Winter North Atlantic Freeboard (if required) =

Deduction for Fresh Water.

Displacement in salt water at summer load water line

$\Delta = 2393$

Tons per inch immersion at summer load water line

T = *15.2*

Deduction = $\frac{\Delta}{40T}$ inches = $\frac{2393}{40 \times 15.2} = 3.93 = 4"$

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient

Depth Correction ... *.89*

Deduction for superstructures ... *11.10*

Sheer correction ... *.04*

Round of Beam correction ... *.62*

Correction for Thickness of Deck amidships

Other corrections, scantlings, etc. ...

Summer Freeboard = *20.71*

SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, *62 Doubles* Steel, Deck:—

Tropical Fresh Water Line above Centre of Disc ...	<i>Y 3/4</i>	Tropical Fresh Water Freeboard ...	<i>1'-8 3/4"</i>
Fresh Water Line " " ...	<i>4</i>	Fresh Water " " ...	<i>1'-11"</i>
Tropical Line " " ...	<i>3 3/4</i>	Tropical " " ...	<i>1'-4 3/4"</i>
Winter Line below " " ...	<i>3 3/4</i>	Winter " " ...	<i>2'-0 1/2"</i>
Winter North Atlantic Line " " ...	<i>5 3/4</i>	Winter North Atlantic " " ...	<i>2'-2 1/2"</i>

PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS

Description of Hatchway	No 1	No 2	No 3	Bunker Hatch (Casing Top)
Dimensions of Hatchway	15'5" X 11'	26'10" X 13'	25' X 12'	11'10" X 5'3"
COAMINGS				
Height above Deck	30"	30"	30"	30"
Thickness	.44	.44	.44	.44
Stiffeners	BA. 7 X 3 X .4	BA. 7 X 3 X .4	BA. 7 X 3 X .4	.44
Brackets, Stays	none	2 even	2 even	none
HATCH BEAMS				
Number	2	4	4	none
Spacing	even	even	even	none
Scantling and Sketch	DA 3 1/2 X 3 X 4 10 1/2 X 3 at centre.	Same but 12 X 3 at centre	Same but 11 X 3 at centre	none
Bearing Surface	DA 3 X 3 X .4 3"	3"	3"	none
FORE AND AFTERS				
Number	none	none	none	none
Spacing	none	none	none	none
Unsupported Lengths	none	none	none	none
Scantling* and Sketch	none	none	none	none
Bearing Surface	none	none	none	none
HATCH COVERS				
Material	W. Pine	as for	as for	W. Pine
Thickness	3"	as for	as for	3"
How fitted	4 x 2	as for	as for	4 x 2
Bearing Surface	3 x 3 1/2	as for	as for	3"
Spacing of Cleats	24"	as for	as for	26"
Number of Tarpaulins	3	as for	as for	2
<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 and Engine Room vents & coamings in good order. Engine room skylights of steel, strongly constructed.*

Particulars of Flush Bunker Scuttles:— *Two flush bunker scuttles on Freeboard Deck, within Bridge Space - 20" dia, strongly constructed cast steel, bayonet joints and chains.*

Particulars of Companionways:— *One steel companionway 4' X 3'10" X 7'2" high, leading from Bridge Deck to Bridge Space; fitted with teak wood door 1 1/2" thick operated by spring lock opening both sides.*

the temp. blowing appliances to be provided:

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

1 Vent on F. castle Deck	5" X 36" X 1/8"	led to Upper Peak.	2 Vents on Poop Deck (oval 9 X 5) X 3/8"	
1 " " Freeboard	15" X 36" X 3/8"	" " No 1 Hold Space.	led to Poop Sp. a	
2 " " " (oval) (4 1/2 X 12) X 3/8"		" " No 2 " "	1 Vent " " " 6" X 30" X 3/8"	led to
2 " " " 15" X 36" X 3/8"		" " No 3 " "	Steering Eng House	
1 " " Poop	15" X 36" X 3/8"	" " " "	2 Vents Bridge Deck (oval 6 X 4 1/2)	
2 " " " 15" X 36" X 3/8"		" " " "	by 18" X 3" led to	
3 " " " (oval) (5 1/2 X 4) X 1/8" X 1/4"		" " Poop Space accom.	open Bridge E	

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

1 L.S. air pipe on F. castle Deck	3" X 12" high	led to F. Peak Tank.	
1 " " " " 3" X 24"		" " No 1 S/S "	
2 " " " " 3" X 25"		" " No 2 " "	
2 " " " (1/2 in S/S) " 5" X 30"		" " No 2 " "	
2 " " " " 3" X 36"		" " Eng. Room S/S tank (screw cap)	
3 " " " Bridge " 3" X 25"		" " No 3 "	
1 " " " Poop " 3" X 25"		" " aft Peak "	

Particulars of Gangway Cargo and Coaling Ports:—

none.

*hatch
holes
provided*



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Particulars of Scuppers and Sanitary Discharge Pipe:—

3	Scuppers each side of fore well deck	6" x 3"	in gunwall bar.
1	" " "	5" dia	fitted with storm valves at ship's side.
4	" " "	Ridge Space 5"	fitted with storm valves at ship's side.
2	Sanitary Discharges	" " "	" " & eff. trap at inner end.
2	" " "	from crew Space in Poop	" " " " " "

Particulars of Side Scuttles:— all side scuttles in 1. castle and Poop brow Space fitted with hinged deadlights.

In Bridge Space, 6 strongly constructed side scuttles each side - no deadlights fitted.

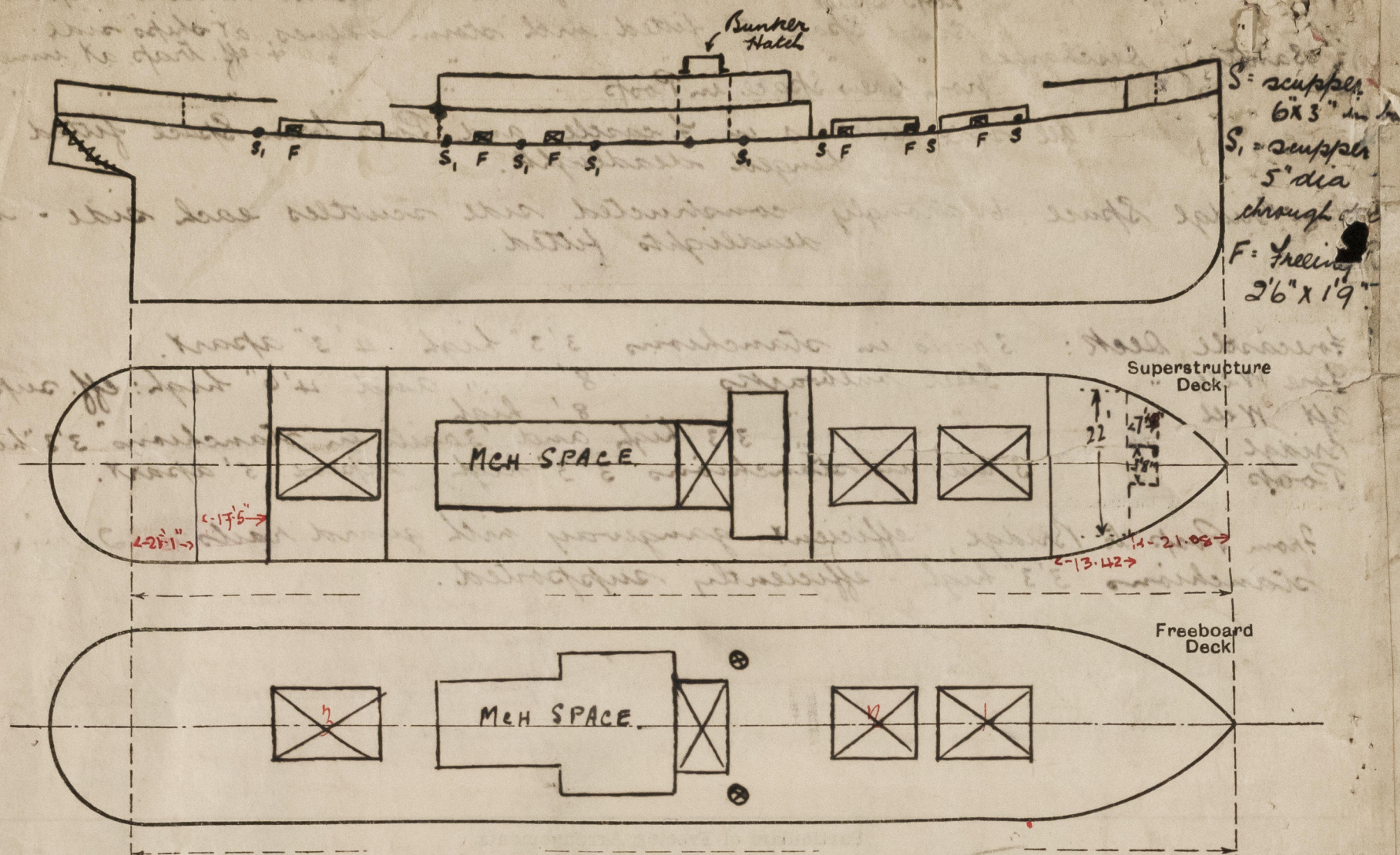
Particulars of Guard Rails:—

Newcastle Dock:	3 rails in stanchions	3'3" high	4'3" apart.
Fore Well	Steel bulwarks	8' " and 4'6" high:	eff. supported.
Aft Well	"	8' high	"
Bridge	"	3'3" high and 3 rails in stanchions	3'3" high 3'3" apart
Poole	3 rails in stanchions	3'3" high	approx 5' apart.

From Post to Bridge, efficient gangway with guard rails: 2 wires in
stanchions 3'3" high - efficiently supported.

ported. -
When no deck cargo carried, lifelines is rigged
from the fore-castle bulkhead to the bridge front-
bowed down to the fore mast.
When deck cargo is carried. the lifelines is rigged
from the bridge front steel bulwarks to the
fore-castle deck one made fast to the windlass
draws.

Superstructure bulkheads, trunks, deckhouses, casings, cargo and coaling hatchways, extent and thickness of sheathing on the freeboard deck, gangways, 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:—

None. *ONE IT*

Builder's name and yard number

Cammell Laird & Co. Ltd. Birkenhead

Names of sister ships

"Blyth"

Owners

London, Midland and Scottish Railway Co. Ltd.

Fee £

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