

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

Computation of Freeboard for Steamer, Sailing Ship, Tugger

having *R. 204 Bridge joined to Forecastle*

Port of Survey *Glasgow*

Date of Survey *3/6/32*

Name of Surveyor *Wm. J. R. R. R.*

Particulars of Classification *+ 100 A.I.*

Ship's Name *MORION* Nationality and Port of Registry *Glasgow* Official Number *143608* Gross Tonnage *423* Date of Build *1919.12*

Moulded Dimensions: Length *143.83* Breadth *25.0* Depth *12.9*

Moulded displacement at moulded draught = 85 per cent. of moulded depth *774* tons

Coefficient of fineness for use with Tables *700*

Depth for Freeboard (D)	Depth correction	Round of Beam correction
Moulded depth ... <i>12.95</i>	(a) Where D is greater than Table depth (D - Table depth) R = <i>52</i> <i>(12.79 - 9.49) 1.099 = 3.59</i>	Moulded Breadth (B) <i>25</i>
Stringer plate ... <i>04</i>	(b) Where D is less than Table depth (if allowed) (Table depth - D) R =	Standard Round of Beam = $\frac{B \times 12}{50} = \frac{6}{50}$
Sheathing on exposed deck <i>none</i>	If restricted by superstructures	Ship's Round of Beam = <i>6.5</i>
$T \left(\frac{L-S}{L} \right) =$		Difference <i>50</i>
Depth for Freeboard (D) = <i>12.79</i>		Restricted to
		Correction = $\frac{\text{Diff}}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{50}{4} \times \frac{4626}{4} = 4.05$

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 ...	<i>48.0</i>	<i>48.00</i>	<i>4.0</i>		<i>48.00</i>
„ overhang ...					
Bridge enclosed ...	<i>10.11</i>	<i>10.11</i>	<i>6.9</i>		<i>10.11</i>
„ overhang aft ...					
„ overhang forward ...					
„ enclosed ...	<i>23.0</i>	<i>14.28</i>	<i>7.6</i>		<i>14.28</i>
„ overhang ...		<i>4.36</i>			<i>4.36</i>
Trunk aft ...					
„ forward ...					
Tonnage opening aft ...					
„ forward ...					
Total ...	<i>81.11</i>	<i>76.75</i>			<i>76.75</i>

Standard Height of Superstructure <i>6</i>	
„ „ R.Q.D. <i>3.288</i>	
Deduction for complete superstructure <i>20.28</i>	
Percentage covered $\frac{S}{L} = \frac{56.79}{100}$	
„ „ $\frac{S_1}{L} = \frac{53.74}{100}$	
„ „ $\frac{E}{L} = \frac{53.74}{100}$	
Percentage from Table, Line A. <i>37.24</i>	
(corrected for absence of forecastle (if required))	
Percentage from Table, Line B. <i>39.74</i>	
(corrected for absence of forecastle (if required))	
Interpolation for bridge less than 2L (if required)	
Deduction = <i>20.28 x 37.24 = 7.55</i>	

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ...	<i>24.28</i>	<i>1</i>		<i>24.28</i>	<i>30.00</i>	<i>30.00</i>	<i>1</i>		<i>30.00</i>
$\frac{1}{2}$ L from A.P. ...	<i>10.80</i>	<i>4</i>		<i>43.20</i>	<i>13.03</i>	<i>13.03</i>	<i>4</i>		<i>52.12</i>
$\frac{3}{8}$ L „ ...	<i>2.67</i>	<i>2</i>		<i>5.34</i>	<i>3.26</i>	<i>3.26</i>	<i>2</i>		<i>6.52</i>
Amidships ...		<i>4</i>					<i>4</i>		
$\frac{3}{8}$ L from F.P. ...	<i>5.34</i>	<i>2</i>		<i>10.68</i>	<i>5.53</i>	<i>5.53</i>	<i>2</i>		<i>11.06</i>
$\frac{1}{2}$ L „ ...	<i>21.60</i>	<i>4</i>		<i>86.40</i>	<i>22.12</i>	<i>22.12</i>	<i>4</i>		<i>88.48</i>
F.P. ...	<i>48.56</i>	<i>1</i>		<i>48.56</i>	<i>51.00</i>	<i>51.00</i>	<i>1</i>		<i>51.00</i>
Total ...	<i>218.52</i>			<i>218.46</i>					<i>239.18</i>

Correction = $\frac{\text{Difference between sums of products}}{18} \left(\frac{75 - S}{2L} \right) = \frac{20.72}{18} \left(\frac{75 - 2839}{2} \right) = 54 \times \frac{0.07}{2} = 0.2$

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 $\frac{700 + 68}{136} = 138$
Depth to Freeboard Deck =	$\Delta =$	Depth Correction ... <i>3.59</i>
Summer freeboard =	Tons per inch immersion at summer load water line	Deduction for superstructures ... <i>8.55</i>
Moulded draught (d) =	T =	Sheer correction ... <i>0.02</i>
Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches =	Deduction = $\frac{\Delta}{40T}$ inches	Round of Beam correction ... <i>0.05</i>
Addition for Winter North Atlantic Freeboard (if required) =		Correction for Thickness of Deck amidships ...
		Other corrections, scantlings, etc. ...
		Summer Freeboard = <i>10.76</i>

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

Tropical Fresh Water Line above Centre of Disc ...	Tropical Fresh Water Freeboard ...
Fresh Water Line „ „ ...	Fresh Water „ „ ...
Tropical Line „ „ ...	Tropical „ „ ...
Winter Line below „ „ ...	Winter „ „ ...
Winter North Atlantic Line „ „ ...	Winter North Atlantic „ „ ...

Morrison


Particulars of fiddle, funnel and ventilator casings:—
Ventilators strong & efficient. — Engine skylight lead with lead flaps, glass panes protected with brass rods. — Casings closed with hinged steel covers. —


Particulars of Flush Bunker Scuttles:— *None - ✓*

Particulars of Companionways:—
 Over Bridge deck, stair to cabin, covered by strong steel house -
 1/2 Deck door 5'-4" x 2'-0" with hinges & lock operated from both sides - Side 11 - ✓
 1 on foreboard deck full height of forecabin, steel 1/4" thick 3'-6" x 2'-6" covering stair to
 crew's quarters - ~~Deck~~ door 2'-0" x 5'-0" x 1/2" with lock & hinges operated from both sides -

Particulars of Ventilators in exposed positions on freeboard and superstructure decks:—
 one 10' Vent forward & one aft in fore well, to hold - Coaming 36" x 40" ✓ Ventilation according to rule
 " 8' " on forecabin to Crew quarter - Coaming 36" x 40" ✓ ~~No wood plating or cover~~
 Satisfactory means of closing provided.

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

One to fore peak under open forecabin, top 14" above deck - ~~cover~~ required → 

One on R.Q.D. aft to after peak, top 9" above deck, ~~flange~~ ~~cover~~ required → 

Satisfactory means of closing provided.

Particulars of Gangway Cargo and Coaling Ports:— *None—*

Particulars of Scuppers and Sanitary Discharge Pipes:—

W.C. under forecastle discharges above fut^d deck with H.R.V. on shell ✓
Officers' " on R.Q.D. discharges about 6" below deck with H.R.V. on shell ✓
Scupper from weather deck discharge above deck - ✓

Particulars of Side Scuttles:—

Imprecise about 3-5" below feet - debt in (wings have strong frames & are fitted with hinged olecranon ligts -)

Particulars of Guard Rails :—

On footpath 5.0 high, 2 rods, stanchions above 4.6 c' apart -
 Stiee bulwarks on R.O.D. in well & on Bridge strong & efficient. ✓

Particulars of Gangways, Lifelines, etc. :—

nona petra -

Ship's Name MORION. Official Number 143608.
Type Raised Quarter Deck, Bridge and Forecastle.

PARTICULARS OF SUPERSTRUCTURES.

	Mean covered length.	Height.
Roof enclosed		
„ overhang		
R.Q.D. enclosed	48.00'	4.0'
„ overhang		
Bridge enclosed <i>Equiv.</i>	10.11'	6.75'
„ overhang aft		
„ overhang forward		
File enclosed <i>open</i>	23.00'	7.50'
„ overhang		
Trunk aft		
„ forward		
Tonnage opening aft		
„ „ forward		
TOTAL	81.11'	

5m,4,37.

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Poop Bulkhead	✓	
Raised Quarter Deck Bulkhead	✓	
Bridge, After Bulkhead	✓	
Bridge, Forward Bulkhead	✓	<i>Circular light about 9' dia. Strong frames no demolish</i> ✓
Forecastle Bulkhead	...	...	✓
Exposed Machinery Casings on Deck	...	...	✓
Exposed Machinery Casings on Superstructure Decks	...	...	✓	<i>2 steel doors to E. room with hinges & lock operated from both sides - both sides</i> ✓
Machinery Casings within Superstructure not fitted with Class I Closing Appliances	...	...	✓	<i>+ 2 " " " Stokholm " " " both operated from one side.</i>
Deckhouses on Flush Deck Ships	...	...	✓

PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS									
Description of Hatchway		...	...	No 1	No 2				
Dimensions of Hatchway		...	...	8' 1/2 x 12' 6"	33' 1/2 x 12' 6"				
COAMINGS	{	Height above Deck	...	3' 6" ✓	3' 6"	BUNKER HATCH REEF NO 2 - 3' 0" x 14' 0" x 3' 6" high x .44 ✓			
		Thickness	...	.50	.50	Fitted with cleats, battens, 3/8 covers with 3" bearing -			
		Sides	...	.44	.44	Covered by tarpaulings of 1/2" hatch -			
		Ends	...	.44	.44				
		Stiffeners	...	2 7/8 x .44	2 7/8 x .44				
HATCH BEAMS	{	Brackets, Stays	...	None ✓	3/2 x 3/2 x 5/8 double at	STORE HATCH - 1st of No 1 - 1' 6" x 2' 0" x 2' 0" high x .44 ✓			
		Number	...	1	6	steel coaming, cleats, covers with 3" bearing			
		Spacing	...	17'-11" x .45	17'-11" x .45	Beams run bottom & tarpaulings - ✓			
		Scantling and Sketch	...	3 x 3 x .40	3 x 3 x .40	- others ✓			
			...	Double	Double				
FORE AND AFTERS	{	Bearing Surface	...	3/2 ✓	3/2 ✓	STORE HATCH - In after deck house 5' 9" x 2' 3" with covers, cleats, battens & tarpaulings - covers by strong steel house & steel door 2' 0" x 5' 0" hinges & lock operated from one side 13' sill -			
		Number	...						
		Spacing	...						
		Unsupported Lengths	...						
		Scantling* and Sketch	...	1 - None - - -					

Particulars of Scuppers and Sanitary Discharge Pipes:-

Scupper under forecastle discharge above first deck with H.R.V. on shell -
 Officers' on R.Q.D. discharge above 6'0" below deck with H.R.V. on shell -
 Scupper from weather deck discharge above deck -

Particulars of Side Scuttles:-

Imprecastable about 2'0" below first deck in bridge house strong frames & are fitted with hinged dead latches -

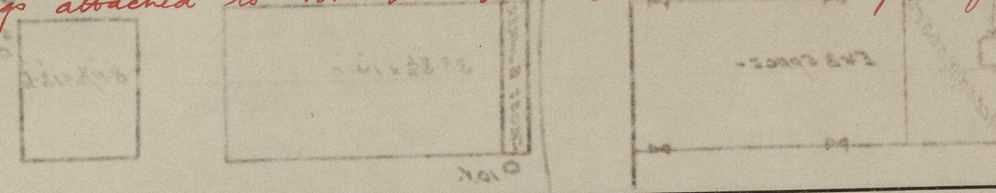
Particulars of Guard Rails:-

On forecastle 3'0" high, 2 rods, stanchions about 4'6" apart -
 Deck bulwarks on R.Q.D. in well & on bridge strong & efficient -

Particulars of Gangways, Lifelines, etc.:-

None fitted -

Gangway provided on starboard side between hatch ends and fittings attached to Bond & Precast bulkheads for lifelines



Particulars of Freeing Arrangements.

	Length of Bulwark	Height of Bulwark	Size of Freeing Ports	Number each side	Area each side	Rule area each side
Starboard Well	48'0"	3'3"	2'0" x 1'6" 2'0" x 1'6"	2	12'0"	11'3"
Forward Well	62'9"	4'4"	2'9" x 1'8 1/2"	3	13'4" 14'1"	12'77"

State position of each freeing port (F. and A. position and height above deck edge) } After Well:-
 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	✓	✓	✓	2'3"	✓	None	✓	4'0" R.Q.D.
Raised Quarter Deck Bulkhead	✓	✓	✓	2'3"	✓	None	✓	2'9"
Bridge, After Bulkhead	✓	✓	✓	3'0" x 3'0" x 1/4"	✓	9'0" x 1'0"	✓	6'9"
Bridge, Forward Bulkhead	✓	✓	✓	2'5" x 3'0" x 1/4"	✓	9'0" x 1'0"	✓	7'6"
Forecastle Bulkhead	✓	✓	✓	2'5" x 3'0" x 1/4"	✓	9'0" x 1'0"	✓	7'6"
Trunk, Aft	✓	✓	✓	2'3"	✓	2'0" x 2'0"	16	6'9"
Trunk, Forward	✓	✓	✓	2'3"	✓	2'0" x 2'0"	16	6'9"
Exposed Machinery Casings on Deck	✓	✓	✓	✓	✓	✓	✓	✓
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	✓	✓
Forecastle Bulkhead	✓	✓
Exposed Machinery Casings on Deck	✓	✓
Exposed Machinery Casings on Superstructure Decks	✓	✓
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	✓	✓
Deckhouses on Flush Deck Ships	✓	✓

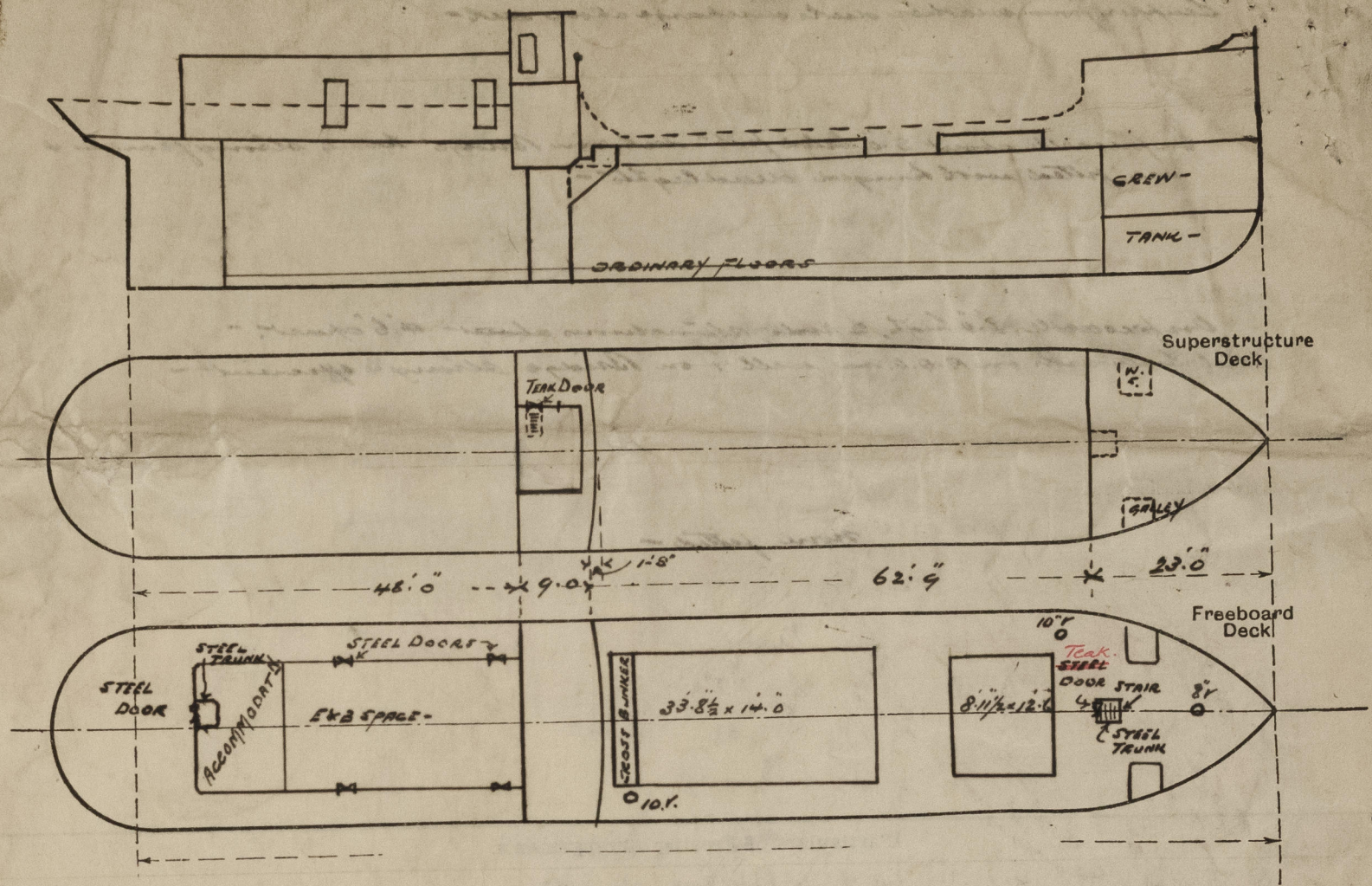
Particulars of Gangway Cargo and Coaling Ports:-

None -

Satisfactory means of closing provided.

Morris

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:-

General trade coasting.

Timber fastboard not required.

This survey was held afloat with vessel loaded & therefore confined to an examination of the means of closing the openings in the decks & sides of the vessel.

Full displacement at	13' 6 1/2 draft	= 959 tons.	Temp. i = 7.
"	"	12' 6 1/2 " = 845	" " = 6.9
"	"	11' 6 1/2 " = 796	" " = 6.8

Request form attached to

Builder's name and yard number *Allen S. B. Co. Ltd. No. 372.*

Names of sister ships *✓*

Owners *W. Robertson - Glasgow.*

Fee £ *5 : 2 : 0*

Received by me

