

*Amended Computation*  
*2" composition in way of marking*  
**Lloyd's Register of Shipping.**  
**SURVEYS FOR FREEBOARD.**

Index. No. **34529**  
 (For London Office only.)

Computation of Freeboard for Steamer, Sailing Ship, Tanker

having Poop, Bridge & Forecastle connected over wells. Openings in ships side in way of wells.  
 (Type of Superstructures.)

Port of Survey Belfast

Date of Survey Aug 13<sup>d</sup> & subsequently

Name of Surveyor R.S. Johnson & A.P. Scott

Particulars of Classification + 100 A1  
"with freeboard"

Ship's Name	Nationality and Port of Registry	Official Number	Gross Tonnage	Date of Build
<u>FISTURIAS</u>	<u>British</u> <u>Belfast</u>	<u>148146</u>	<u>22048</u>	<u>1923</u>

Moulded Dimensions: Length 639.00 Breadth 78.00 Depth 44.77 to C. deck  
 Moulded displacement at moulded draught = 85 per cent. of moulded depth 40,480 tons  
 Coefficient of fineness for use with Tables .747

Depth for Freeboard (D)	Depth correction	Round of Beam correction
Moulded depth ... .. <u>44.77</u>	(a) Where D is greater than Table depth (D-Table depth) R = <u>(44.84 - 42.60) 3.00</u> <u>= + 6.72"</u>	Moulded Breadth (B) <u>78.00</u>
Stringer plate ... .. <u>.05</u>	(b) Where D is less than Table depth (if allowed) (Table depth-D) R = <u>✓</u>	Standard Round of Beam = $\frac{B \times 12}{50} =$ <u>18.72</u>
Sheathing on exposed deck $T \left( \frac{L-S}{L} \right) = .25 \times .0622$ <u>.02</u>	If restricted by superstructures <u>✓</u>	Ship's Round of Beam = <u>6"</u>
Depth for Freeboard (D) = <u>44.84</u>		Difference <u>Defic. 12.72</u>
		Restricted to
		Correction = $\frac{\text{Diff}}{4} \times \left( 1 - \frac{S_1}{L} \right) = \frac{12.72}{4} \times .0664 = + .21$

## DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S <sub>1</sub> )	Height	Height Correction	Effective Length (E)
Poop enclosed <del>89.00</del>	<u>42.83</u>	<u>42.83</u>	<u>8'-8"</u>		<u>42.83</u>
" overhang ...	<u>4.25</u>	<u>2.12</u>			<u>2.12</u>
R.Q.D. enclosed					
" overhang					
Bridge enclosed...	<u>43.75</u>	<u>43.75</u>	<u>8'-8"</u>		<u>43.75</u>
" overhang aft ...	<u>.50</u>	<u>.38</u>			<u>.38</u>
" overhang forward	<u>.50</u>	<u>.25</u>			<u>.25</u>
Fore enclosed ...	<u>136.87</u>	<u>136.87</u>	<u>8'-8"</u>		<u>136.87</u>
" overhang ...	<u>.50</u>	<u>.25</u>			<u>.25</u>
Trunk aft ...					
" forward ...					
Tonnage opening aft					
" forward					
Total ...	<u>599.20</u>	<u>596.45</u>			<u>596.45</u>

Standard Height of Superstructure 7.50

" " R.Q.D. ✓

Deduction for complete superstructure 42.00

Percentage covered  $\frac{S}{L} =$  93.78%

" "  $\frac{S_1}{L} =$  93.36%

" "  $\frac{E}{L} =$  93.36%

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

Percentage from Table, Line B. 91.83%  
 (corrected for absence of forecastle (if required))

Interpolation for bridge less than 2L (if required)

Deduction = 42.00  $\times$  .9183 = -38.57"

*Lowest point of sheer is 62'-7 1/2" aft of midships*  
*Fall in sheer at this point is 3 1/4"*

## SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ...	<u>73.90</u>	1		<u>73.90</u>	<u>54.00</u>	<u>54.00</u>	1		<u>54.00</u>
1/2 L from A.P. ...	<u>32.88</u>	4		<u>131.52</u>	<u>26.50</u>	<u>26.50</u>	4		<u>106.00</u>
2/3 L " ...	<u>8.13</u>	2		<u>16.26</u>	<u>2.75</u>	<u>2.75</u>	2		<u>5.50</u>
Amidships ...	<u>✓</u>	4		<u>✓</u>	<u>✓</u>	<u>✓</u>	4		<u>✓</u>
2/3 L from F.P. ...	<u>16.26</u>	2		<u>32.52</u>	<u>24.75</u>	<u>16.69</u>	2		<u>33.38</u>
1/2 L " ...	<u>65.76</u>	4		<u>263.04</u>	<u>65.75</u>	<u>67.50</u>	4		<u>270.00</u>
F.P. ...	<u>147.80</u>	1		<u>147.80</u>	<u>134.25</u>	<u>151.71</u>	1		<u>151.71</u>
Total ...				<u>665.04</u>					<u>620.59</u>

Mean actual sheer aft = Deficient 71.98% of standard.

Mean actual sheer forward = Excess Forward  
 Mean standard sheer forward = Standard sheer  $\times$   $\frac{404.31}{373.86}$  = Effective Sheer

Length of enclosed superstructure forward of amidships = > .1 L

" " aft of " = > .1 L

Sheer forward	Actual	Standard	Actual
<u>48.78</u>	<u>74.25</u>	<u>73.90</u>	<u>54.00</u>
<u>197.28</u>	<u>197.25</u>	<u>98.64</u>	<u>79.50</u>
<u>147.80</u>	<u>134.25</u>	<u>24.39</u>	<u>8.25</u>
<u>393.86</u>	<u>405.75</u>	<u>196.93</u>	<u>141.75</u>

Correction =  $\frac{\text{Difference between sums of products}}{18} \left( .75 - \frac{S}{2L} \right) = \frac{44.45}{18} \left( .75 - \frac{46.89}{28.11} \right) = + .69"$

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.

Ft.  
 Depth to Freeboard Deck = 44.99  
 Summer freeboard = 14.10  
 Moulded draught (d) = 30.89

Deduction for Tropical freeboard and addition for Winter freeboard =  $\frac{d}{4}$  inches = 7.72" = 7 3/4"

Addition for Winter North Atlantic Freeboard (if required) = ✓

Deduction for Fresh Water.

Displacement in salt water at summer load water line

$\Delta =$  32110

Tons per inch immersion at summer load water line

T = 98.6

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

= 8.14" = 8 1/4"

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient

$\frac{68 + .747}{1.36} = \frac{14.27}{1360}$

Depth Correction ... .. 6.72

Deduction for superstructures ... .. - 38.57

Sheer correction ... .. .69

Round of Beam correction ... .. .21

Correction for Thickness of Deck amidships ... .. 1.76

Other corrections, scantlings, and 2" composition 52.74

Approved summer moulded draught 62.12 38.57 + 23.55

Summer Freeboard = 169.25

SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, 2" composition on Steel, Deck:—

Tropical Fresh Water Line above Centre of Disc ... .. 16"

Fresh Water Line " " ... .. 8 1/4"

Tropical Line " " ... .. 7 3/4"

Winter Line below " " ... .. 7 3/4"

Winter North Atlantic Line " " ... .. ✓

Tropical Fresh Water Freeboard ... .. 14'-1 1/4"

Fresh Water " " ... .. 12'-9 1/4"

Tropical " " ... .. 13'-5"

Winter " " ... .. 13'-5 1/2"

Winter North Atlantic " " ... .. 14'-9"

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# PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS									
Description of Hatchway	...	...	...	...	...	...	...	...	...
Dimensions of Hatchway	...	...	...	...	...	...	...	...	...
COAMINGS	Height above Deck	...	...	...	...	...	...	...	...
	Thickness	...	...	...	...	...	...	...	...
	Stiffeners	...	...	...	...	...	...	...	...
	Brackets, Stays	...	...	...	...	...	...	...	...
HATCH BEAMS	Number	...	...	...	...	...	...	...	...
	Spacing	...	...	...	...	...	...	...	...
	Scantling and Sketch	...	...	...	...	...	...	...	...
	Bearing Surface	...	...	...	...	...	...	...	...
FORE AND AFTERS	Number	...	...	...	...	...	...	...	...
	Spacing	...	...	...	...	...	...	...	...
	Unsupported Lengths	...	...	...	...	...	...	...	...
	Scantling* and Sketch	...	...	...	...	...	...	...	...
HATCH COVERS	Material	...	...	...	...	...	...	...	...
	Thickness	...	...	...	...	...	...	...	...
	How fitted	...	...	...	...	...	...	...	...
	Bearing Surface	...	...	...	...	...	...	...	...
Spacing of Cleats	...	...	...	...	...	...	...	...	...
Number of Tarpaulins	...	...	...	...	...	...	...	...	...

\*Are wood fore and afters steel shod at all bearing surfaces?  
 Are battens and wedges efficient and in good condition?  
 Are tarpaulins in good condition and in accordance with rule requirements?  
 Are lashings provided in accordance with rule requirements?

Particulars of fiddley, funnel and ventilator coamings:—

Particulars of Flush Bunker Scuttles:—

Particulars of Companionways:—

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

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

Particulars of Gangway Cargo and Coaling Ports:—

Particulars of Scuppers and Sanitary Discharge Pipes:—

Particulars of Side Scuttles:—

Particulars of Guard Rails:—

Particulars of Gangways, Lifelines, etc.:—

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	...	...	...	...	...	...
Forward Well	...	...	...	...	...	...

State position of each freeing port (F. and A. position and height above deck edge) } After Well:—  
 } Forward 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	...	...	...	...	...	...	...	...
Raised Quarter Deck Bulkhead	...	...	...	...	...	...	...	...
Bridge, After Bulkhead	...	...	...	...	...	...	...	...
Bridge, Forward Bulkhead	...	...	...	...	...	...	...	...
Forecastle Bulkhead	...	...	...	...	...	...	...	...
Trunk, Aft	...	...	...	...	...	...	...	...
Trunk, Forward	...	...	...	...	...	...	...	...
Exposed Machinery Casings on Freeboard or Raised Quarter Decks	...	...	...	...	...	...	...	...
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 Freeboard or Raised Quarter Decks	...
Exposed Machinery Casings on Superstructure Decks	...
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	...
Deckhouses on Flush Deck Ships	...