Rpt. C.11.

Lloyd's Register of Shipping.
SURVEYS FOR FREEBOARD.

Index. No. 29230.
(For London Office only.)

Computation of Freeboard for Steamer, ~~Sailing Ship, Tanker~~

having Forecastle & Bridge.

(Type of Superstructures.)

Port of Survey

Ship's Name	Nationality and Port of Registry	Official Number	Gross Tonnage	Date of Build
ARAUCANIA.				1918

Date of Survey 8-10-31.

Name of Surveyor

Moulded Dimensions: Length 170·0   Breadth   Depth 16.50.

Particulars of Classification +100A1.

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

Coefficient of fineness for use with Tables ·68 (Lowest in Tables assumed)

Depth for Freeboard (D)

Moulded depth	16·50
Stringer plate	·02
Sheathing on exposed deck $T\left(\frac{L-S}{L}\right)=$	✓
Depth for Freeboard (D) =	16.52

Depth correction

(a) Where D is greater than Table depth
(D — Table depth) R =

$(16.52 - 11.33) \times 1.307 = +6.78$

(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)	
Standard Round of Beam = $\frac{B \times 12}{50}$ =	7.16
Ship's Round of Beam =	8.00
Difference	·84
Restricted to	
Correction = $\frac{Diff}{4} \times \left(1-\frac{S_1}{L}\right)$ =	$\frac{·84}{4} \times ·5955 = ·12.$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S₁)	Height	Height Correction	Effective Length (E)
Poop enclosed					
„ overhang					
R.Q.D. enclosed ...					
„ overhang					
Bridge enclosed ...	50.00	50.00			50.00
„ overhang aft ...					
„ overhang forward					
F'cle enclosed	17.00	17.00	6·6"	✓	17.00
„ overhang	3.50	1·75			1·75
Trunk aft					
„ forward					
Tonnage opening aft ...					
„ forward					
Total	70·50	68·75			68·75

Standard Height of Superstructure	6·0
„ „ R.Q.D.	3·467
Deduction for complete superstructure	23·00
Percentage covered $\frac{S}{L}$ =	41·47%
„ „ $\frac{S_1}{L}$ =	40·45%
„ „ $\frac{E}{L}$ =	40·45%
Percentage from Table, Line A. (corrected for absence of forecastle (if required))	
Percentage from Table, Line B. (corrected for absence of forecastle (if required))	27·88
Interpolation for bridge less than ·2L (if required)	
Deduction =	$23 \times ·2788 = -6·41"$

SHEER CORRECTION.

Station	Standard Ordinate	S M	Product	Actual Ordinate	Effective Ordinate	S M	Product
A.P.	27·00	1	27·00	50·00	50·00	1	50·00
⅙L from A.P. ...	12·01	4	48·04	22·12	22·12	4	88·48
²⁄₆L „ ...	2·97	2	5·94	5·52	5·52	2	11·04
Amidships	—	4	—	—	—	4	—
²⁄₆L from F.P. ...	5·94	2	11·88	8·08	8·08	2	16·16
⅙L „ ...	24·02	4	96·08	32·39	32·39	4	129·56
F.P.	54·00	1	54·00	67·00	67·00	1	67·00
Total ...			242·94				362·24

$\frac{\text{Mean actual sheer aft}}{\text{Mean standard sheer aft}} = \text{excess}$

$\frac{\text{Mean actual sheer forward}}{\text{Mean standard sheer forward}} = \text{excess}.$

$\frac{\text{Length of enclosed superstructure}}{L}$ forward of amidships = ·032

„ „ aft of „ = ✓

Correction = $\frac{\text{Difference between sums of products}}{18} \left(·75 - \frac{S}{2L}\right) = \frac{119·3}{18} \times ·5427 \times \frac{13}{20} = -2·34"$

If limited on account of midship superstructure. $\frac{·13}{·20} \times 3·06 = 2·34$ If limited to maximum allowance of 1½ ins. per 100 ft. ✓

Deduction for Tropical Freeboard. Addition for Winter and Winter North Atlantic Freeboard.

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

Deduction for Tropical freeboard and addition for

Winter freeboard = $\frac{d}{4}$ inches =

Addition for Winter North Atlantic Freeboard (if required =

Deduction for Fresh Water.

Displacement in salt water at summer load water line

$\triangle =$

Tons per inch immersion at summer load water line

$T =$

Deduction = $\frac{\triangle}{40\,T}$ inches =

TABULAR FREEBOARD corrected for Flush Deck (if required)

		18·30
Correction for coefficient		18·30

	+	—
Depth Correction	6·78	
Deduction for superstructures ...		6·41
Sheer correction		2·34
Round of Beam correction ...		·12
Correction for Thickness of Deck amidships		
Other corrections, scantlings, etc. ...		
	6·78	8·87 = -2·09

Summer Freeboard = 16·21

SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, Wood, Steel, Deck :— 1'-4½"

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	

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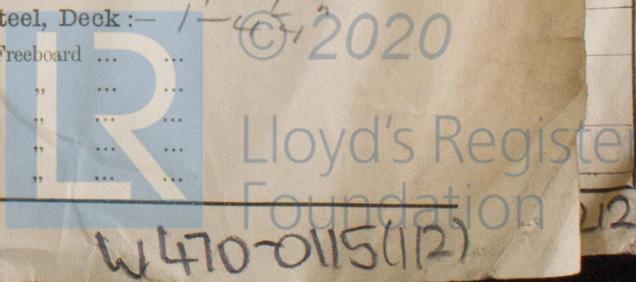
HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS

Description of Hatchway									
Dimensions of Hatchway									
COAMINGS	Height above Deck ...								
	Thickness { Sides ...								
	{ Ends ...								
	Stiffeners								
	Brackets, Stays ...								
HATCH BEAMS	Number								
	Spacing								
	Scantling and Sketch ...								
	Bearing Surface ...								
FORE AND AFTERS	Number								
	Spacing								
	Unsupported Lengths ...								
	Scantling* and Sketch ...								
	Bearing Surface ...								
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 ... ... { After Well :—
(F. and A. position and height above deck edge) { 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 ...								