

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

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

having *complete superstructure and a tonnage opening*
Combined forecastle, bridge and raised quarter deck.
(Type of Superstructures.)

Port of Survey *Gothenburg*
Date of Survey *11th January 1937*
Name of Surveyor *T. Widen*

Ship's Name *A.B. CRICHTON-VULCAN O.Y.* Nationality and Port of Registry *YARD Nos 747-748.* Official Number Gross Tonnage Date of Build

Moulded Dimensions: Length *56.0 metrs.* Breadth *10.2 metrs.* Depth *6.3 metrs. to shelter dk*
Moulded displacement at moulded draught = 85 per cent. of moulded depth *4.1 " " 2nd "* tons
Coefficient of fineness for use with Tables *Not to exceed 0.70*

Particulars of Classification *8100A.1. with freeboard. Strengthened for navigation in ice. (Class contemplated)*

Depth for Freeboard (D)		Depth correction		Round of Beam correction	
Moulded depth	<i>4.1 metrs.</i> <i>4.100</i>	(a) Where D is greater than Table depth (D - Table depth) R =	<i>8.33(4.100 - 3.133) 14.14 = + 44 m/m.</i>	Moulded Breadth (B)	<i>10.2 metrs.</i>
Stringer plate	<i>810 m</i> <i>.008</i>	(b) Where D is less than Table depth (if allowed) (Table depth - D) R =	<i>✓</i>	Standard Round of Beam = $\frac{B \times 12}{50}$ =	<i>204 m/m.</i>
Sheathing on exposed deck	<i>✓</i> <i>✓</i>			Ship's Round of Beam =	<i>210 m. shelter dk</i>
$T \left(\frac{L-S}{L} \right) =$				Difference	<i>deficient = 204 m.m.</i>
Depth for Freeboard (D) =	<i>4.108</i>	If restricted by superstructures	<i>✓</i>	Restricted to	
				Correction = $\frac{\text{Diff}^{\circ}}{4} \times \left(1 - \frac{S_1}{L} \right)$ =	<i>$\frac{204}{4} \times 0.124 = +1 m/m$</i>

DEDUCTION FOR SUPERSTRUCTURES.

Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
<i>Roop enclosed</i> <i>29.510</i>	<i>29.510</i>	<i>2.100</i>	<i>✓</i>	<i>29.510</i>
<i>" overhang</i> <i>.220</i>	<i>.110</i>	<i>✓</i>	<i>✓</i>	<i>.110</i>
<i>R.Q.D. enclosed</i> <i>24.970</i>	<i>24.970</i>	<i>2.200</i>	<i>✓</i>	<i>24.970</i>
<i>" overhang</i> <i>✓</i>				
<i>Bridge enclosed</i> <i>24.970</i>	<i>24.970</i>	<i>2.200</i>	<i>✓</i>	<i>24.970</i>
<i>" overhang aft</i> <i>✓</i>				
<i>" overhang forward</i> <i>✓</i>				
<i>P'cle enclosed</i> <i>24.970</i>	<i>24.970</i>	<i>2.200</i>	<i>✓</i>	<i>24.970</i>
<i>" overhang</i> <i>✓</i>				
<i>Trunk aft</i> <i>✓</i>				
<i>" forward</i> <i>✓</i>				
<i>Tonnage opening</i> <i>1.300</i>	<i>.705</i>	<i>1/2 diff.</i>	<i>✓</i>	<i>.705</i>
<i>" forward</i> <i>✓</i>				
<i>Total</i> <i>56.000</i>	<i>55.295</i>			<i>55.295</i>

Standard Height of Superstructure *1830 m/m.*
" " R.Q.D. *1083 m/m.*
Deduction for complete superstructure *620 m/m.*
Percentage covered $\frac{S}{L} = 100.00$
" " $\frac{S_1}{L} = 98.43$
" " $\frac{E}{L} = 98.43$
Percentage from Table, Line A. *98.44*
(corrected for absence of forecastle (if required))
Percentage from Table, Line B. *✓*
(corrected for absence of forecastle (if required)) *✓*
Interpolation for bridge less than 2L (if required) *✓*
Deduction = *620 x .9844 = 610 m/m.*

SHEER CORRECTION.

Station	Standard Ordinate	S	Product	Actual Ordinate	Effective Ordinate	S	Product
A.P.	<i>720</i>	<i>1</i>	<i>720</i>	<i>600</i>	<i>970</i>	<i>1</i>	<i>970</i>
$\frac{1}{4}L$ from A.P.	<i>320</i>	<i>4</i>	<i>1280</i>	<i>150</i>	<i>432</i>	<i>4</i>	<i>1728</i>
$\frac{3}{4}L$ "	<i>80</i>	<i>2</i>	<i>160</i>	<i>0</i>	<i>104</i>	<i>2</i>	<i>214</i>
Amidships	<i>-</i>	<i>4</i>	<i>-</i>	<i>0</i>	<i>-</i>	<i>4</i>	<i>-</i>
$\frac{3}{4}L$ from F.P.	<i>160</i>	<i>2</i>	<i>320</i>	<i>150</i>	<i>206</i>	<i>2</i>	<i>412</i>
$\frac{1}{4}L$ "	<i>640</i>	<i>4</i>	<i>2560</i>	<i>630</i>	<i>832</i>	<i>4</i>	<i>3328</i>
F.P.	<i>1441</i>	<i>1</i>	<i>1441</i>	<i>1500</i>	<i>1870</i>	<i>1</i>	<i>1870</i>
Total			<i>6481</i>				<i>8522</i>

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{2041}{18} (.75 - .50) = -28 m/m.$
If limited on account of midship superstructure. *✓* If limited to maximum allowance of $1\frac{1}{2}$ ins. per 100 ft. *✓*

Mean actual sheer aft = *Excess.*
Mean standard sheer aft = *Excess.*
Mean actual sheer forward = *Excess.*
Mean standard sheer forward = *Excess.*
Length of enclosed superstructure forward of amidships = *> .1L*
" " aft of " = *=*

Deduction for Tropical Freeboard.	Deduction for Fresh Water.	TABULAR FREEBOARD	514 m/m.
Addition for Winter and Winter North Atlantic Freeboard.	Displacement in salt water at summer load water line	Corrected for Flush Deck (if required)	
Depth to Freeboard Deck = <i>4.108</i>	$\Delta =$	Correction for coefficient $\frac{.70 + .68}{1.36} = \frac{1.38}{1.36}$	<i>525 m/m.</i>
Summer freeboard = <i>.050</i>	Tons per inch immersion at summer load water line	Depth Correction <i>44.</i>	
Moulded draught (d) = <i>4.058</i>	T =	Deduction for superstructures <i>- 610</i>	
Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{48}$ inches = <i>85 m/m.</i>	Deduction = $\frac{\Delta}{40T}$ inches	Sheer correction <i>- 28</i>	
Addition for Winter North Atlantic Freeboard (if required) = <i>135 m/m.</i>	$\frac{d}{48} = 85 m/m.$	Round of Beam correction <i>1</i>	
		Correction for Thickness of Deck amidships <i>-</i>	
		Other corrections, scantlings, etc. <i>-</i>	
		<i>45 638 - 593 m/m.</i>	
		Summer Freeboard = <i>- 68 m/m.</i>	

SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, *Wood, Steel, Deck* :- *50 m/m (limited)*

Tropical Fresh Water Line above Centre of Disc <i>85 m/m</i>	Tropical Fresh Water Freeboard <i>MINUS.. 35</i>
Fresh Water Line " " <i>85</i>	Fresh Water " <i>MINUS.. 35</i>
Tropical Line " " <i>(limited) 0</i>	Tropical " " <i>50 (limited)</i>
Winter Line below " " <i>85</i>	Winter " " <i>135</i>
Winter North Atlantic Line " " <i>135</i>	Winter North Atlantic " " <i>185</i>

PARTICULARS OF PROTECTION TO OPENINGS, ETC.

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								
HATCH BEAMS	Bearing Surface								
FORE AND AFTERS	Number								
	Spacing								
	Unsupported Lengths								
	Scantling* and Sketch								
FORE AND AFTERS	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 fiddle, 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:—

All the rule requirements to be complied with.

Particulars of Scuppers and Sanitary Discharge Pipes:—

Particulars of Side Scuttles:—

Particulars of Guard Rails:—

Particulars of Gangways, Lifelines, etc.:—

to be complied with.

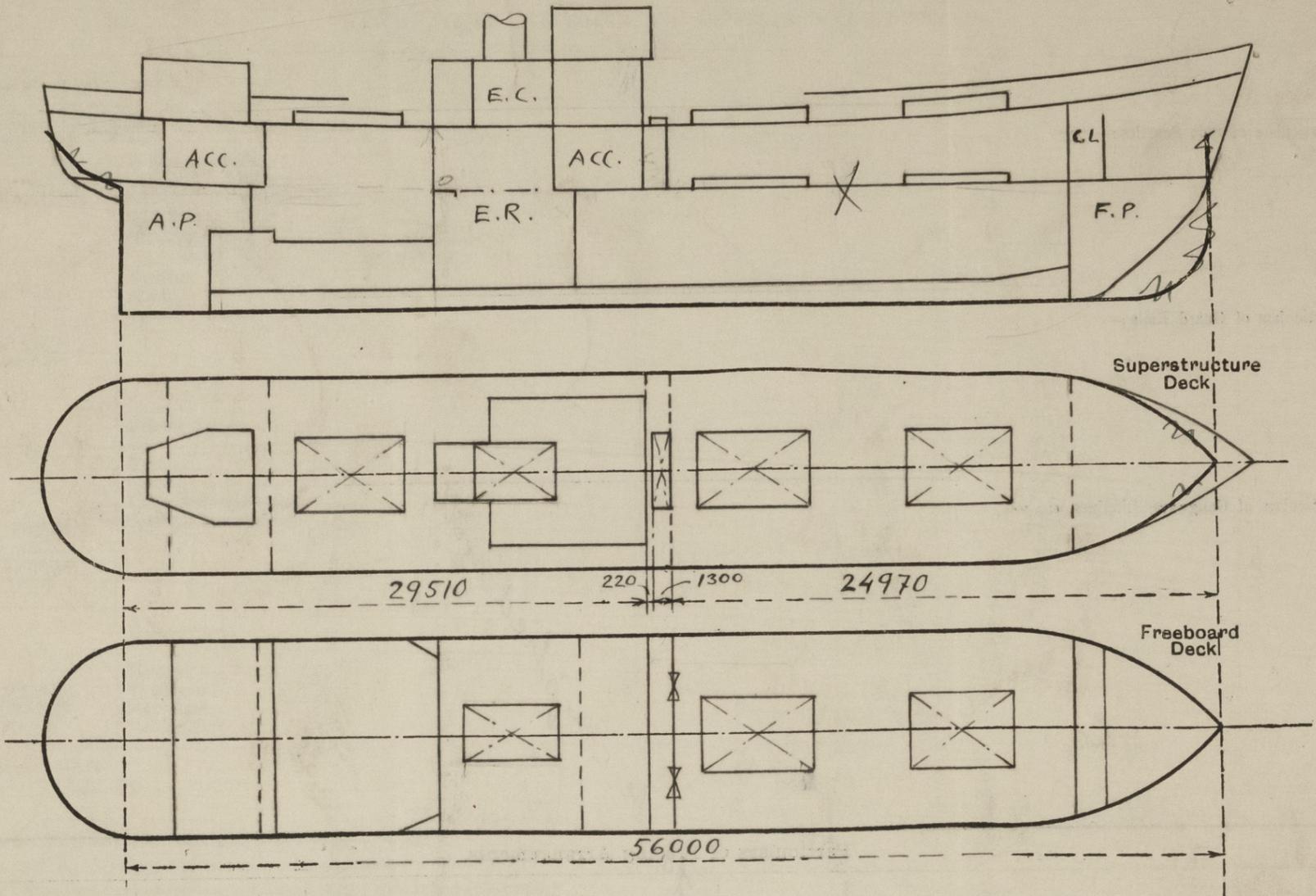
Particulars of Freeing Arrangements.						
	Length of Bulwark	Height of Bulwark	Size of Freeing Ports	Number each side	Area each side	Rule area each side
After Well						
Forward Well						

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, 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	

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:—

Builder's name and yard number A.B. CRICHTON - VULCAN OY. N^{OS} 747-748.

Names of sister ships _____

Owners _____

Fee £ ✓ : _____

Received by me _____



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