

# 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 *11<sup>th</sup> January 1937*

Name of Surveyor *T. Widen*

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

Ship's Name *A.B. CRICHTON-VULCAN O.Y.* Nationality and Port of Registry *YARD Nos 747-748.* Gross Tonnage *56.0* Date of Build *1937*

Moulded Dimensions: Length *56.0* metrs. Breadth *10.2* metrs. Depth *6.3* metrs. to shelter dk. *4.1* " " 2<sup>nd</sup> "

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

Coefficient of fineness for use with Tables *Not to exceed 0.70*

Depth for Freeboard (D)		Depth correction		Round of Beam correction	
Moulded depth	<i>4.1</i> metrs. ... <i>4.100</i>	(a) Where D is greater than Table depth (D - Table depth) R = <i>8.33(4.108 - 3.133) 14.14 = + 44 m/m.</i>	Moulded Breadth (B)	<i>10.2</i> metrs.	Standard Round of Beam = $\frac{B \times 12}{50} = \frac{204}{50} = 204 \text{ m/m.}$
Stringer plate	<i>810</i> m/m ... <i>.008</i>	(b) Where D is less than Table depth (if allowed) (Table depth - D) R = <i>.375</i>	Ship's Round of Beam	<i>0</i> " " 2 <sup>nd</sup> "	Difference <i>deficient</i> = <i>204 m/m.</i>
Sheathing on exposed deck	<i>✓</i>	If restricted by superstructures <i>✓</i>	Difference	<i>deficient</i> = <i>204 m/m.</i>	Restricted to
$T \left( \frac{L-S}{L} \right) =$	<i>✓</i>		Correction = $\frac{\text{Diff}^\circ}{4} \times \left( 1 - \frac{S_1}{L} \right) = \frac{204}{4} \times 0.124 = +1 \text{ m/m.}$		
Depth for Freeboard (D) =	<i>4.108</i>				

## DEDUCTION FOR SUPERSTRUCTURES.

*See also sketch.*

	Mean Covered Length (S)	Equivalent Enclosed Length (S <sub>1</sub> )	Height	Height Correction	Effective Length (E)
Roop enclosed ...	<i>29.510</i>	<i>29.510</i>	<i>2.100</i>	<i>✓</i>	<i>29.510</i>
" overhang ...	<i>.220</i>	<i>.110</i>	<i>✓</i>	<i>✓</i>	<i>.110</i>
R.Q.D. enclosed ...					
" overhang ...					
Bridge enclosed ...	<i>24.970</i>	<i>22.00</i>	<i>2.200</i>	<i>✓</i>	<i>24.970</i>
" overhang aft ...	<i>✓</i>				
" overhang forward ...	<i>✓</i>				
P'cle enclosed ...	<i>24.970</i>	<i>24.970</i>	<i>2.200</i>	<i>✓</i>	<i>24.970</i>
" overhang ...					
Trunk aft ...					
" forward ...					
Tonnage opening aft ...	<i>1.300</i>	<i>.705</i>	<i>1/2 diff.</i>	<i>✓</i>	<i>.705</i>
" forward ...					
Total ...	<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  $\frac{S}{L} = 100.00$ "  $\frac{S_1}{L} = 98.73$ "  $\frac{E}{L} = 98.73$ 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 =  $620 \times .9844 = 610 \text{ m/m.}$ 

## SHEER CORRECTION.

Station	Standard Ordinate m/m	S	M	Product	Actual Ordinate m/m	Effective Ordinate m/m	S	M	Product
A.P. ...	<i>720</i>	<i>1</i>	<i>720</i>	<i>600</i>	<i>970</i>	<i>1</i>	<i>970</i>		
$\frac{1}{2}L$ 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>		
$\frac{1}{2}L$ " ...	<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 =  $\frac{\text{Difference between sums of products}}{18} \left( .75 - \frac{S}{2L} \right) = \frac{2041}{18} (.75 - .50) = -28 \text{ m/m.}$ If limited on account of midship superstructure. *✓*If limited to maximum allowance of  $1\frac{1}{2}$  ins. per 100 ft. *✓*Deduction for Tropical Freeboard.  
Addition for Winter and Winter North Atlantic Freeboard.

Depth to Freeboard Deck = *4.108* Ft.

Summer freeboard = *.050*

Moulded draught (d) = *4.058*

Deduction for Tropical freeboard and addition for Winter freeboard =  $\frac{d}{48} \text{ inches} = 85 \text{ m/m.}$

Addition for Winter North Atlantic Freeboard (if required) = *135 m/m.*

Deduction for Fresh Water.

Displacement in salt water at summer load water line

 $\Delta =$ 

Tons per inch immersion at summer load water line

T =

Deduction =  $\frac{\Delta}{40T} \text{ inches}$  $\frac{d}{48} = 85 \text{ m/m.}$ 

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient  $\frac{.70 + .68}{1.36} = \frac{1.38}{1.36}$ 

Depth Correction ...

Deduction for superstructures ...

Sheer correction ...

Round of Beam correction ...

Correction for Thickness of Deck amidships ...

Other corrections, scantlings, etc. ...

514 m/m.

525 m/m.

m/m

m/m

44

610

28

1

-

-

45

638

-593 m/m.

Summer Freeboard = -68 m/m.

SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, *Wood, Steel, Deck*:—Tropical Fresh Water Line above Centre of Disc ... *85 m/m*Fresh Water Line " " *86*Tropical Line " " *(limited) 0*Winter Line below " " *85*Winter North Atlantic Line " " *135*Tropical Fresh Water Freeboard *MINUS 35*Fresh Water " *MINUS 35*Tropical " *50*Winter " *135*Winter North Atlantic " *185**(limited)**(limited)**(limited)*



# 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 ...								
	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 ... ..									
<p>*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?</p>									

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 :—

Particulars of Scuppers and Sanitary Discharge Pipes :—

Particulars of Side Scuttles :—

Particulars of Guard Rails :—

Particulars of Gangways, Lifelines, etc. :—

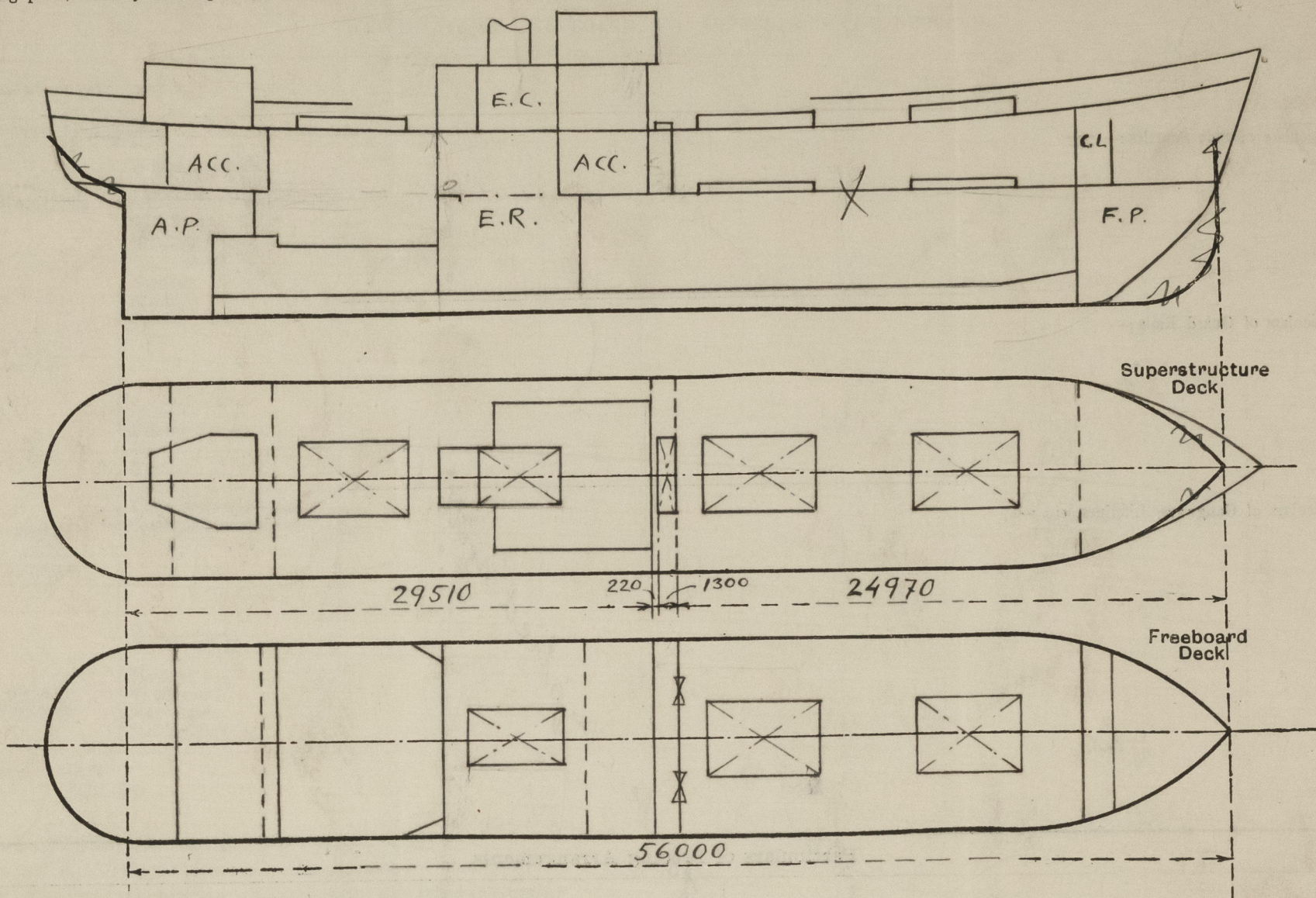
Particulars of Freeing Arrangements.						
	Length of Bulwark	Height of Bulwark	Size of Freeing Ports	Number each side	Area each side	Rule area each side
After Well ... ..						
Forward Well ... ..						
<p>State position of each freeing port ... .. { After Well            (F. and A. position and height 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.</p>						

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 OX. N<sup>os</sup> 747-748.

Names of sister ships \_\_\_\_\_

Owners \_\_\_\_\_

Fee £ ✓ : \_\_\_\_\_

Received by me \_\_\_\_\_



© 2020

Lloyd's Register  
Foundation