

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

 Index No. **35869**
 (For London Office only).

 No. **27661**

Ship's Name m/c CITRINE	Official Number 165956	Nationality and Port of Registry British Glasgow	Gross Tonnage 783	Date of Build 1938	Port of Survey Hardenhuvel
Moulded Dimensions: Length 108' 0" Breadth 29' 0" Depth 13' 6"					Date of Survey Building
Moulded displacement at moulded draught = 85 per cent. of moulded depth 1318 tons					Surveyor's Signature J. Hewer
Coefficient of fineness for use with Tables .737					Particulars of Classification +100 A1 Contemplated.

Depth for Freeboard (D).	Depth correction.	Round of Beam correction.
Moulded depth ... 13.5'	(a) Where D is greater than Table depth (D - Table depth) R = (13.53 - 12.53) 1.446 = + 1.45"	Moulded Breadth (B) 29' 0"
Stringer plate03'	(b) Where D is less than Table depth (if allowed) (Table depth - D) R = 1.06'	Standard Round of Beam = $\frac{B \times 12}{50} = \frac{29 \times 12}{50} = 6.96"$
Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$	If restricted by superstructures	Ship's Round of Beam = 0.60' = 7.20"
Depth for Freeboard (D) = 13.53'		Difference = .24'
		Restricted to
		Correction = $\frac{\text{Diff}}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{.24}{4} \times .208 = -.01'$

DEDUCTION FOR SUPERSTRUCTURES.

Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)	Standard Height of Superstructure
Poop enclosed ... 40.83'	48.83'	7' 6" + 2 1/2"		48.83'	6' 0"
.. overhang ... ✓					R.Q.D. 3.587'
R.Q.D. enclosed ... 78.83'	78.83'	4' 0"		78.83'	Deduction for complete superstructure 24.80'
.. overhang ... ✓					Percentage covered $\frac{S}{L} = \frac{80.49}{79.20} = .8049$
Bridge enclosed ... ✓					$\frac{S_1}{L} = \frac{79.20}{79.20} = 1.00$
.. overhang aft ... ✓					$\frac{E}{L} = \frac{79.20}{79.20} = 1.00$
.. overhang forward ... ✓					Percentage from Table, Line A. 74.31'
F'cle enclosed 23.66'	21.23'	6' 9"		21.23'	(corrected for absence of forecastle (if required))
.. overhang ... ✓					Percentage from Table, Line B.
Trunk aft ... ✓					(corrected for absence of forecastle (if required))
.. forward ... ✓					Interpolation for bridge less than 2L (if required)
Tonnage opening aft ... ✓					Deduction = 24.80' x .7431 = - 18.43'
.. forward ... ✓					
Total ... 151.32'	148.89'			148.89'	

SHEER CORRECTION.

* See back of computation

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product	Mean actual shear aft = excess
A.P. ...	28.80'	1		28.80'	33"	48.55'	1		48.55'	Mean actual shear forward = excess
1/4 L from A.P. ...	12.815'	4		51.26'	12 1/2"	21.60'	4		86.40'	Mean standard shear forward = excess
1/2 L ..	3.17'	2		6.34'	3"	5.34'	2		10.68'	Length of enclosed superstructure forward of amidships = .179L
Amidships ...		4					4			.. aft of .. = .5L
3/4 L from F.P. ...	6.34'	2		12.68'	6"	6.00'	2		12.00'	
1/4 L ..	25.63'	4		102.52'	20 3/4"	28.75'	4		115.00'	
F.P. ...	57.60'	1		57.60'	73"	73.00'	1		73.00'	
Total ...				259.20'					345.63'	

Correction = $\frac{\text{Difference between sums of products}}{18} \left(\frac{.75 - S}{2L} \right) = \frac{86.43}{18} \left(\frac{.75 - .4024}{2} \right) = - 1.67"$

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.

RAISED QUARTER	Ft.
Depth to Freeboard Deck =	17.53'
Summer freeboard =	4.27'
Moulded draught (d) =	13.26'

Deduction for Tropical freeboard and addition for

 Winter freeboard = $\frac{d}{4}$ inches = **3.31' = 3 3/4'**

 Addition for Winter North Atlantic Freeboard (if required) = **5 1/4'**

Deduction for Fresh Water.

Displacement in salt water at summer load water line

 $\Delta = 1550$

Tons per inch immersion at summer load water line

 $T = 11.82$

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

 = **3.28'**
3 1/4'

TABULAR FREEBOARD corrected for Flush Deck (if required)

 Correction for coefficient $\frac{.737 + .68}{1.36} = \frac{1.417}{1.36}$

	+	-	
Depth Correction ...	1.45		
Deduction for superstructures ...		18.43	
Sheer correction ...		1.67	
Round of Beam correction01	
Correction for Thickness of Deck amidships ...	148.00		
Other corrections, scantlings, etc. ...			
	149.45	20.11	+ 29.34
			Summer Freeboard = 51.30

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

Tropical Fresh Water Line above Centre of Disc ...	4 1/2"
Fresh Water Line ..	3 3/4"
Tropical Line ..	1 1/4"
Winter Line below ..	3 3/4"
Winter North Atlantic Line ..	5 1/4"

Tropical Fresh Water Freeboard ...	4' - 3 1/4"
Fresh Water ..	3' - 10 3/4"
Tropical ..	4' - 0"
Winter ..	4' - 2" (LIMITED)
Winter North Atlantic ..	4' - 6 1/2"
	4' - 8 1/2"

Citrine.

A new form should be prepared if any alterations that affect the freeboard have been made. If no such alterations have been made, the Surveyor should endorse the form on this side with his signature and the date.

Actual sheer at poop front = 6.25 ✓
Excess height of raised quarter deck = $\frac{4.96}{11.21}$ ✓

Actual raised quarter deck height = 4.00' ✓
Standard " " " " $\frac{3.587}{12}$ ✓
Difference 4.956" ✓

Virtual sheer at Aft Perpendicular $11.21 \left(\frac{94}{45.17} \right)^2 = 48.55"$ ✓

Actual sheer at A.P. = 33.00 ✓
Height of poop $\frac{92.50}{125.50}$ ✓
Standard Ht. of Raised Qr. Dk $\frac{43.04}{82.46}$ ✓

Trade of ship *Seagoing Trade*

Names of sister ships *✓*

Builder's name and yard number *N.V. Scheepswaerf De Nieuwe Jan N° 386*

Owners *William Robertson. (Application form will be sent afterwards.)*

Fee *f 96.00*



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