

# Lloyd's Register of Shipping.

## SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

Ship's Name <b>ORCA</b>	Official Number	Nationality and Port of Registry	Gross Tonnage	Date of Build	Port of Survey
Moulded Dimensions: Length <b>57.00 m.</b> Breadth <b>9.15 m.</b> Depth <b>2.85 m.</b>					Date of Survey <b>28/2/51</b>
Moulded displacement at moulded draught = 85 per cent. of moulded depth <b>10.10</b> <sup>m<sup>3</sup></sup> <sub>tons</sub>					Surveyor's Signature
Coefficient of fineness for use with Tables <b>.799</b>					Particulars of Classification <b>Contingent</b>

DEPTH FOR FREEBOARD (D).	DEPTH CORRECTION.	ROUND OF BEAM CORRECTION.
Moulded depth ... .. <b>2.850</b>	(a) Where D is greater than Table depth (D-Table depth) R =	Moulded Breadth (B) <b>9.15</b>
Stringer plate ... .. <b>.007</b>	(b) Where D is less than Table depth (if allowed) (Table depth-D) R =	Standard Round of Beam = $\frac{B \times 12}{50} = \frac{9.15 \times 12}{50} = 183$
Sheathing on exposed deck $T \left( \frac{L-S}{L} \right) =$	<b>8.33 (3.800 - 2.857) 14.394 = -113 m/m</b> <b>.943</b>	Ship's Round of Beam = <b>NIL</b>
Depth for Freeboard (D) = <b>2.857</b>	If restricted by superstructures <b>YES</b> <b>NIL</b>	Difference <b>-183</b>
		Restricted to
		Correction = $\frac{\text{Diff}^2}{4} \times \left( 1 - \frac{S_1}{L} \right) = \frac{183^2}{4} \times \frac{1}{4} \times 6.133 = +28 m/m$

## DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S <sub>1</sub> )	Height	Height Correction	Effective Length (E)
Poop enclosed ... ..	<b>9.535</b>	<b>9.535</b>	<b>2.100</b>	✓	<b>9.535</b>
" overhang ... ..	<b>.605</b>	<b>.303</b>			<b>.303</b>
R.Q.D. enclosed ... ..					
" overhang ... ..					
Bridge enclosed ... ..					
" overhang aft ... ..					
" overhang forward ... ..					
Fore enclosed ... ..	<b>5.580</b>	<b>5.580</b>	<b>.750</b>	<b>.750/1830</b>	<b>2.287</b>
" overhang ... ..	<b>6.680</b>	<b>6.680</b>	<b>2.310</b>	✓	<b>6.680</b>
Trunk aft ... ..					
" forward ... ..					
Tonnage opening aft ... ..					
" " forward ... ..					
Total ... ..	<b>22.400</b>	<b>22.098</b>			<b>18.805</b>

Standard Height of Superstructure <b>1830 m/m</b>
" " R.Q.D. ✓
Deduction for complete superstructure <b>628 m/m</b>
Percentage covered $\frac{S}{L} = \frac{39.30}{100} = 39.30$
" " $\frac{S_1}{L} = \frac{38.77}{100} = 38.77$
" " $\frac{E}{L} = \frac{32.99}{100} = 32.99$
Percentage from Table, Line A. <b>17.54</b>
(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 = <b>628 x .1754 = -110 m/m</b>

## SHEER CORRECTION.

Station	Standard Ordinate	S M	Product	Actual Ordinate	Effective Ordinate	S M	Product
A.P. ... ..	<b>729</b>	1	<b>729</b>	<b>1115</b>	<b>729</b>	1	<b>729</b>
$\frac{1}{6}L$ from A.P. ... ..	<b>324</b>	4	<b>1296</b>	<b>500</b>	<b>324</b>	4	<b>1296</b>
$\frac{2}{6}L$ " ... ..	<b>81</b>	2	<b>162</b>	<b>10</b>	<b>81</b>	2	<b>162</b>
Amidships ... ..	✓	4	✓	✓	✓	4	✓
$\frac{3}{6}L$ from F.P. ... ..	<b>162</b>	2	<b>324</b>	✓	✓	2	✓
$\frac{4}{6}L$ " ... ..	<b>648</b>	4	<b>2592</b>	<b>95</b>	<b>95</b>	4	<b>380</b>
F.P. ... ..	<b>1458</b>	1	<b>1458</b>	<b>380</b>	<b>380</b>	1	<b>380</b>
Total ... ..			<b>6561</b>				<b>2947</b>

Correction =  $\frac{\text{Difference between sums of products}}{18} \left( .75 - \frac{S}{2L} \right) = \frac{3614 (.75 - .1965)}{18} = +111$   
 If limited on account of midship superstructure. **.5535** 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 = **2.857**  
 Summer freeboard = **.640**  
 Moulded draught (d) = **2.217**

## Deduction for Tropical freeboard and addition for

Winter freeboard =  $\frac{d}{48} \text{ inches} = \frac{2.217 \times 12}{48} = 5.57$  **5 cm**

Addition for Winter North Atlantic Freeboard (if required) = **46 + 51 = 97 m/m = 10 cm**

## Deduction for Fresh Water.

Displacement in salt water at summer load water line

Δ =  
 Tons per inch immersion at summer load water line

T =

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

= **5 cm**

## TABULAR FREEBOARD corrected for Fresh Deck (if required)

Correction for coefficient

$\frac{.799 + .68}{1.36} = \frac{1.479}{1.36}$

Depth Correction ... ..

Deduction for superstructures ... ..

Sheer correction ... ..

Round of Beam correction ... ..

Correction for Thickness of Deck amidships ... ..

Other corrections, scantlings, etc. **CORRESPONDING**

To a SUMMER MOULDED DRAUGHT

OF **2.217 m.** ✓

Summer Freeboard = **640**

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

Tropical Fresh Water Line above Centre of Disc **NOT ASSIGNED**

Fresh Water Line " " **5 cm**

Tropical Line " " **NOT ASSIGNED**

Winter Line below " " **5 cm**

Winter North Atlantic Line " " **NOT ASSIGNED**

Tropical Fresh Water Freeboard **NOT ASSIGNED**

Fresh Water " " **5 cm**

Tropical " " **NOT ASSIGNED**

Winter " " **6 cm**

Winter North Atlantic " " **NOT ASSIGNED**



Orca.

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.

$$\begin{aligned} \text{look} \quad \text{Length at side} &= 9.140 \checkmark \\ + \quad \frac{(0.6 \times 5.750) - \left[2 \times 0.6^2 \left(1 - \frac{\pi}{4}\right)\right]}{8.350} &= \frac{3.3 \text{ m}^2}{8.35} = \frac{.395 \checkmark}{9.535} = \text{Equiv. length.} \end{aligned}$$

$$\begin{aligned} 0/11 &= 1.000 - .395 \\ &= .605 \checkmark \end{aligned}$$

Trade of ship .....

Names of sister ships .....

Builder's name and yard number .....

Owners .....

Fee £ .....



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Foundation