

WRECK SECTION No. 10151

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

Index No. 27335
(For London Office only).

Ship's Name EMPIRE MINIVER <i>ex</i> WEST COBALT	Official Number 167629	Nationality and Port of Registry British London	Gross Tonnage 6055.32 6179.53	Date of Build 1918	Port of Survey Manchester Date of Survey Aug 10th, 12th & 14th 1940 Surveyor's Signature Harry S. Newton Particulars of Classification + 100 M1 (contingent)
Moulded Dimensions: Length 410.45' Breadth 54.00' Depth 30.20'					
Moulded displacement at moulded draught = 85 per cent. of moulded depth _____ tons					
Coefficient of fineness for use with Tables .793 estimated.					

Depth for Freeboard (D): Moulded depth ... 30.20 Stringer plate05 Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$ ✓ Depth for Freeboard (D) = 30.25	Depth correction. (a) Where D is greater than Table depth $(D - \text{Table depth}) R =$ $(30.25 - 27.36) \times 3 = + 8.67$ 2.859 (b) Where D is less than Table depth (if allowed) $(\text{Table depth} - D) R =$ ✓ If restricted by superstructures ✓	Round of Beam correction. Moulded Breadth (B) 54.00 Standard Round of Beam = $\frac{B \times 12}{50} =$ 12.96 Ship's Round of Beam = 13.50 Difference .54 Restricted to $\frac{\text{Diff}}{4} \times \left(1 - \frac{S_1}{L} \right) =$ $\frac{.54}{4} \times .5006 =$ -.07
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DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed ...	43.75	43.75	8.5'	-	43.75
" overhang ...					
R.Q.D. enclosed ...					
" overhang ...					
Bridge enclosed ...	114.75	114.75	8.5'	-	114.75
" overhang aft ...					
" overhang forward ...					
Fore enclosed ...	46.50	46.50	8.5'	-	46.50
" overhang ...					
Trunk aft ...					
" forward ...					
Tonnage opening aft ...					
" " forward ...					
Total ...	205.00	205.00			205.00

Standard Height of Superstructure **7.5'**
 " " R.Q.D. **✓**
 Deduction for complete superstructure **42"**
 Percentage covered $\frac{S}{L} =$ **49.94**
 $\frac{S_1}{L} =$
 $\frac{E}{L} =$
 Percentage from Table, Line A. **✓**
 (corrected for absence of forecastle (if required))
 Percentage from Table, Line B. **35.95**
 (corrected for absence of forecastle (if required))
 Interpolation for bridge less than 2L (if required) **✓**
 Deduction = **42 × 35.95 = -15.10**

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ...	51.04	1		51.04	51.5"	51.5	1		51.50
1/4 L from A.P. ...	22.71	4		90.84	8"	8.0	4		32.00
1/2 L " ...	5.615	2		11.23	-4.5"	-4.5	2		-9.00
Amidships ...	-	4		-	✓	-	4		-
3/4 L from F.P. ...	11.23	2		22.46	14"	11.23	2		22.46
1/4 L " ...	45.42	4		181.68	48.5"	45.42	4		181.68
F.P. ...	102.09	1		102.09	124"	102.09	1		102.09
Total ...				459.34					380.73

Mean actual sheer aft = **Deficient (less than .50)**
 Mean standard sheer aft
 Mean actual sheer forward = **Excess**
 Mean standard sheer forward
 Length of enclosed superstructure forward of amidships = **Deficient**
 " " aft of " = **Excess**

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{78.61}{18} \left(.75 - \frac{.2497}{.5003} \right) = + 2.18$
 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.

Depth to Freeboard Deck = **30.25'**
 Summer freeboard = **6.37'**
 Moulded draught (d) = **23.88'**

Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = **5.97 = 6"**
 Addition for Winter North Atlantic Freeboard (if required) = **✓**

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 = $\frac{\Delta}{40T}$ inches
6 1/2"

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient	$\frac{.793 + .68}{1.36} = \frac{1.473}{1.36}$	
Depth Correction	8.65	
Deduction for superstructures	15.10	
Sheer correction	2.18	
Round of Beam correction	.07	
Correction for Thickness of Deck amidships	-	
Other corrections, scantlings, etc.	-8.5	
	10.23	15.17

Summer Freeboard = **76.50.47**SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, **Wood, Steel, Deck**:-

Tropical Fresh Water Line above Centre of Disc	12 1/2"	Tropical Fresh Water Freeboard	5.4"
Fresh Water Line	6 1/2"	Fresh Water	5.10 1/2"
Tropical Line	6"	Tropical	5.10 1/2"
Winter Line below	6"	Winter	6.10 1/2"
Winter North Atlantic Line	-	Winter North Atlantic	-

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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.

Fee £